FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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General Mills To Build Plant At Stockton, Cal.

MINNEAPOLIS — General Mills, Inc., will start construction of a new formula feed plant in early January at Stockton, Cal., C. H. Bell, president, announced this week.

The new facility is scheduled to be completed by September, 1956. It will mark the return of General Mills to Stockton where the Sperry Milling Co., the company's oldest predecessor, started business more than 100 years ago. Sperry Milling Co. became a part of General Mills in 1929.

The new plant will manufacture General Mills' complete line of Larro SureFeeds for livestock and poultry. It will be equipped, Mr. Bell said, to turn out feeds in pelleted, cubed or crumbled form, plus mash feeds, and will have a capacity of more than 100,000 tons a year.

It will be able to package feeds in 100 lb. textile and 50 lb. paper bags. It will also provide facilities for delivery in bulk. Loading facilities will provide shipping and receiving by both railroad car and truck.

The plant will be electronically controlled. Ninety-eight per cent of its ingredients will be handled in bulk.

The structure will provide multiple storage for various types of grain and will include space for laboratories, maintenance shops and offices. The mill and bins will be of concrete, the warehouse buildings of steel.

Preliminary plans for the plant, Mr. Bell said, were developed by General Mills' engineering department. J. G. Ferguson Co. of San Francisco, general contractors, is responsible for final engineering.

FEEDSTUFFS Features

A predicted increase in efficiency and specialization in hog raising—along with likely developments in feeds and feeding programs—is discussed in an article on page 54 in which Dr. Damon Catron of Iowa State College presents his views on "Your Future Hog Feed Customer." Many reports on new findings in animal nutrition research were presented at the 1955 meeting of the American Society of Animal Production, and the second of a series of articles summarizing the reports will be found on page 12. Other features in this week's Feedstuffs include:

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Cameron to Build New Feed Plant

NORTH LITTLE ROCK, ARK. — Cameron Feed Mills, Inc., North Little Rock, has announced plans for construction of a new feed plant in Nashville, Ark.

The plant, which will have a capacity of more than 100 tons a day, will be placed in operation as quickly as installation of machinery can be completed, said G. Ted Cameron, president of the company. This is expected to be in March, 1956.

Mr. Cameron said a site on the Missouri Pacific railroad has been obtained for the mill. It is between Sheppard St. on the north and Clark St. on the south. Cassady's Hatchery is planning a new location just east of the new Cameron site.

"We will have a modern feed manufacturing plant, with the latest type equipment, for the production of broiler and turkey feeds to serve the rapidly expanding poultry industry in this area," Mr. Cameron said. The mill will be similar to another installation the company has in Russellville, Ark.

The new Nashville plant will specialize in production of poultry feeds (mash, pellets and crumbles) to be used in bulk feeding operations. No

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Farmers Urged to Hold Down Farrowing of Spring Pigs

WASHINGTON — Hog producers are being urged to avoid excessive pig farrowings next spring.

The suggestion came this week from Ezra Taft Benson, secretary of agriculture in connection with a statement noting that special programs to expand the marketing of pork products, thus helping to improve prices, will be continued and emphasized.

Mr. Benson called attention of farmers to the advisability of careful planning now for the farrowing of the 1956 spring pigs, in order to avoid a repetition of the record production which has depressed prices down this fall.

"If producers hold down the number of spring pigs raised in 1956 their market position will be strengthened when these pigs are marketed next year," Mr. Benson pointed out. "Developments this year show clearly what can happen when production runs ahead of effective demand at remunerative prices."

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Poult, Chick Production Show Gains

Further Expansion Of Poultry Output Seen in USDA Data

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — The almost incredible broiler and turkey industries seem to be continuing their merry run-up of production levels.

The U.S. Department of Agriculture's report this week on hatchery production of chicks and poults in November indicates new high levels of potential production.

In this connection, there is increasing awareness in official circles that estimates of production costs for broilers and turkeys must be revised downward from previously accepted figures. This, of course, is because of the increased efficiency of feed conversion, and it means that producers can now sell at lower prices than formerly.

The top feed man in USDA—Walter C. Berger, associate director of the Commodity Stabilization Service—pointed out, for example, that a good many broiler producers are now turning out 3-lb. broilers in nine weeks with a feed efficiency of no more than 2.6 lb. of feed per pound of gain.

Turkey Expansion

Nevertheless, the USDA November hatchery report will provide little comfort to turkey industry leaders who have feared that comfortable profits from 1955 operations may lead the industry into another scramble to hike turkey output in 1956.

At the same time, the report points up continued broiler chick placements well ahead of year-ago figures.

The November report indicates that production of heavy breed turkey poults is bulging over last year's corresponding level, and a significant danger signal is seen in a sharp increase in the number of heavy breed eggs in incubators.

While this period, ahead of the main hatching season, is not necessarily so important, the figures do indicate to some extent the buoyant optimism of producers. Unless production is checked later and held to this past year's total output, the industry advisory committee and USDA folks feel that growers may be bargaining for financial difficulties be-

(Continued on page 77)

New Benson Plan Calls for Soil-Bank And Compromise on Price Supports

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — A patch-work farm program revealing some new major farm aid techniques and probably designed to hold wavering farm votes for the Republicans is now being contemplated by the Benson administration for presentation to the second session of the 84th Congress. However, the amount of new money to be poured into the farm belt under the proposal being considered is called by some observers here wholly inadequate for the needed all-out attack on declining farm income or for building a solid base for a new farm problem solution.

The Benson program announced this week is a little of this and a little of that while the secretary holds to his flexible price support principles. The theory of the situation, according to observers here, is precisely this: both the rigid high price support advocates and the moderate or flexible supporters find themselves in a blind alley from which they are looking for an out. They realize now price supports as the cornerstone of farm programs do not supply the answer. Consequently, the hope is that this dilemma, the U.S. Department of Agriculture now appears to be contemplating a mixture of rigid and flexible supports, thereby saving face for the high support followers through which they can go to their farm constituents and proclaim they are providing an opportunity for them to obtain 60% of parity or more.

The provision calls for a different type of support program. For wheat, for example, it would be defined as a "desirable" variety of wheat would be supported at 90% of parity and the "less desirable" varieties would be supported at some-what lower level of parity. Just how a variety would be defined as "desirable" is not clear, even by USDA, but trade sources sense a bitter fight over that detail. It generally has been the sense of the congressional leaders that those varieties of wheat

(Continued on page 77)

MUSIC AT EXCHANGE

MINNEAPOLIS — The trading floor of the Minneapolis Grain Exchange will ring with Christmas music at 1:30 p.m. Dec. 22 when the King Midas Choristers under the direction of Mel McLaughlin will present a short program.

Merry Merry CHRISTMAS!

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Wage-Hour Revisions?

ACCORDING to the Chamber of Commerce of the United States, the field covered by the Fair Labor Standards Act is alive with activity. It is virtually certain, the Chamber spokesmen say, that Congress will have before it proposals to extend coverage of the statute to groups of employees and employers not now affected.

"Newell Brown, new administrator of the Wage and Hour Division of the Department of Labor, has given notice that a public hearing will be held concerning possible changes in the exemption now contained in the Act pertaining to executive, administrative and professional employees," the Chamber letter continues. "Some increased activity is expected in enforcement of provisions of the Act."

It is predicted that the administration definitely will ask that the provisions of the Act be amended to include in its coverage certain groups of employees now exempt. No specific areas of interest have been announced as yet. However, it is general knowledge that the present retail and service exemption will be one on which some recommendations to extend coverage will be made.

The retail exemption and the area of production exemption are two provisions of the Fair Labor Standards Act that are of major importance to the feed industry. Their removal would limit severely the hours of work without overtime pay, regardless of the season of the year. It also would place every feed and grain operation within the definition of interstate commerce.

The repercussions of this on the feed industry and on feeders—through higher costs, restricted hours and limited services — will be far reaching. Every agricultural community will be affected.

Feed and grain associations will continue to lead a fight against the removal of these exemptions, but feed and grain operators must recognize that they have the responsibility not only of supporting their associations, but also of participating in organizing community opposition to the changes. Local newspaper editors, other business men, and farmers should be informed as to what these measures mean to them. After all, the changes will have to be made by Congress, and the congressmen should be told at once by those who elect them what the sentiment of the rural areas is on these matters.

Drastic changes in the Act already have been proposed in several bills introduced during the first session of this Congress, according to the Chamber of Commerce. These bills would extend the basic coverage of the Act to all employees of employers whose business activities "affect interstate commerce," a very wide and all-embracing term. Senator Douglas, chairman of the Senate subcommittee handling labor matters, has declared himself strongly in favor of extension of coverage for the Act.

"At this writing," the Chamber states, "no exemption, as it now stands, appears to be beyond consideration by Congress in its search for areas in which to expand the law."

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Opportunity in Change

A WEEK ago, we commented on the growing trend toward more specialization, increased efficiency and larger units in agriculture. It was noted that feed men cannot ignore the change, nor can they refuse to alter their own methods of doing business, as and if the changes occur in farming. The coming years, we said, will demand close attention to what is happening in these matters and ingenuity in meeting the new conditions.

In line with this is an article on page 54 of this week's Feedstuffs, entitled "Your Future Hog Feed Customer." Dr. Damon Catron of Iowa State College describes the changes which he feels are coming in hog production, and he urges feed men to be on top of or ahead of the trend toward increased specialization and efficiency. He recommends that they be prepared with feeds and feeding programs geared to serve the future customer, with his increased capitalization and his increased know-how. The predicted changes will mean an opportunity to sell more and better feeds, Dr. Catron points out, but the feed man will have to be equipped himself to keep up with and help the better hog raisers.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

Sales of formula feed showed modest improvement in some areas but slipped back elsewhere. The lull was anticipated for the most part, as buying interest usually lags before the holidays as dealers and feeders turn their attention to other matters and in a number of states are holding down inventories for year-end taxes. The depressed hog market is cutting sharply in to sales of hog feeds. Poultry feed sales, meanwhile, are holding up quite well. Most manufacturers look for an upswing in demand after the first of the year as dealers' stocks are said to be low. Ingredient markets were irregular. Millfeed and linseed meal fell back slightly, while alfalfa meal and soybean meal were quoted higher. Fish meal and molasses also were firmer. The index of wholesale feedstuffs prices was off .2 point to 188.1 and the feed grain index declined .3 point to 187.3 in the week ending Dec. 14. (Ingredient details on pages 78-80.)

Southwest

The pendulum of feed demand swung on the upside for feed manufacturers of the Southwest this week, although there were few, if any, who read any great significance into the improvement in sales. Most felt that the upswing was merely a reaction to the previously low level of bookings in the preceding week and not indicative of any general buying wave.

Confirming this was the fact that the improvement came in virtually all types of feeds that are seasonally active, indicative of depleted dealer inventories. Because of Jan. 1 floor stocks taxes, dealers in many states want year-end stocks at an absolute minimum.

Hog feed business continues to drag, and the improvement in this type was less marked than in other feeds. Turkey feeds, of course, are going downhill seasonally. There was some variation on cattle feeds, reports ranging from slow to very good. Dairy and poultry feed volume was better, but not spectacularly so.

As an average, mills of the Southwest increased running time this week, with most on a five-day basis. Price cards were mostly unchanged, but with a stronger undertone to many ingredients, it was felt that the price line might not be held very long.

Central States

Following a week of slight improvement, formula feed sales slid back to dullness in the central states during the period ending Dec. 14. Observers said that the continued poor markets for livestock made a formidable barrier for any sustained buying activity on the part of dealers and feeders.

Much of the feed manufacturing industry appears now to believe that no important sales developments can be expected until after the turn of the year, and some even feel that no pickup will appear until as late as March of 1956. The climate on the farm front is very unfavorable to stocking up on supplies, they say.

Prices made small gains in the preceding week, responding to an advance in corn prices. Soybean oil meal firmed, as did the millfeed market. Other ingredients, however, for the most part, found tough sledding. The tendency is for feed manufacturers to hold their inventories at low levels, buying from hand-to-mouth.

Northwest

Formula feed business was somewhat slower this week in the Northwest as buying slipped back to the usual pre-holiday pace. The outlook is not considered too gloomy, however, as volume for most manufacturers is running ahead of November and it is believed will likely tie last December's tonnage by the time the month is over.

Sales of egg feeds are holding up well — in fact, some moderate improvement in this business was noted by some manufacturers. Dairy feed sales gained somewhat, also.

The chief deterrent to better business is the very light demand for hog feeds as farmers continue to express their disapproval of current pork prices by cutting back on purchases of formula feeds. Hope for some improvement in this situation is based on the possibility that the extremely heavy run of hogs will be over before too long and the prospect of some firming up in prices.

Another factor that is holding down feed sales is the difficulty dealers are experiencing in making collections from farmers, many of whom are extremely short of cash. Dealers are reluctant to extend further credit, and with so much of their money tied up in receivables they in turn are holding back on purchases from manufacturers.

Operations held to five days, ranging from one shift to two shifts, and backlogs of orders are slim.

Northeast

Feed for mixing with corn, oats and other grains on the farm were in good demand this week. Sales of other types of formula feed were about steady with the preceding week.

Egg mashes and breeding mashes led the general sales turnover, and demand for dairy feed is improving. Broiler prices held about steady, but eggs varied in some sections and gave the market an irregular undertone.

Alfalfa meal continued to advance. Brewers grains were erratic and varied in a wide range of from $1 to $4. Canadian offerings were from $2 to $3 below domestic levels. Distillers grains were very scarce, but prices held unchanged. Gluten feed moved up $2, and hominy feed advanced $1.50.

Soybean oil meal and cottonseed oil meal were unchanged. Linseed oil meal declined $1. Meat scraps and tankage held firm. Supplies of fish meal were limited, and prices held steady.

Running time of formula feed manufacturers averaged five days this week.

The millfeed market was in a pre-holiday lull last week and sales were extremely quiet. Mixers are working off their inventories and withholding their new commitments for income tax purposes. Country trade was dull. Some eastern buyers entered western markets because levels there were somewhat below the market at Buffalo. Bran ended the week unchanged, midds. were down $1 to $1.50 and heavy feeds were unchanged.

Ohio Valley

Sales of formula feeds this week in the Ohio Valley were reported somewhat improved, although still far from what can be described as "good." Temperatures have continued well below freezing, making indoor feeding necessary, but ample supplies of homegrown feeds still are

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FLAVOR CORPORATION OF AMERICA

Seasons Greetings

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ARKANSAS OFFICERS—New officers and directors of the Arkansas Feed Manufacturers Assn. elected at the recent annual meeting in Hot Springs are pictured above. They are, left to right, front row: T. E. Mosley, H. K. Cochran Co., Little Rock, secretary-treasurer; Stephan Burke, J. F. Weinmann Milling Co., Little Rock, president; James Dunaway, Thibault Milling Co., Little Rock, vice president; back row, directors, Keith Smith, Hot Springs; Gail Brown, Jeff D. Brown & Co., Springdale; Joe Ray, Joe Ray Enterprises, Danville; G. Ted Cameron, Cameron Feed Mills, Little Rock, and H. W. Davis, Horseshoe Mills, Pine Bluff.

Arkansas Feed Manufacturers Elect Officers

HOT SPRINGS, ARK. — Stephan Burke, J. F. Weinmann Milling Co., Little Rock, was elected president of the Arkansas Feed Manufacturers Assn. at the annual meeting in Hot Springs recently. Mr. Burke succeeds G. Ted Cameron, Cameron Feed Mills, Little Rock, as head of the organization.

As vice president, the group elected James M. Dunaway, Thibault Milling Co., Little Rock, and as secretary-treasurer, T. E. Mosley, H. K. Cochran Co., Little Rock.

New directors chosen were Keith Smith, Hot Springs; Gail Brown, Jeff D. Brown & Co., Springdale; Joe Ray, Joe Ray Enterprises, Danville; G. Ted Cameron, and H. W. Davis, Horseshoe Mills, Pine Bluff.

In a business session, the association approved a number of projects for 1956 including the following:

- The association voted to continue sponsoring a Formula Feed Conference at the University of Arkansas in 1956.
- The association awarded scholarships in the amount of $1,000 to five agricultural colleges in Arkansas.
- A donation of $400 was made to the University of Arkansas' Agri Club, to pay the travel expenses of their judging team to the national contest.
- A donation of $300 was made to the 4-H Club Foundation of Arkansas to pay the travel expenses of 4-H students to the National Poultry Contest.

The organization members also discussed the work of the various regular standing committees on public relations, membership and credit, which will continue to function in the coming year.

Ray T. Siman — Charles U. Kelly

OFFER—Protein Blenders, Inc., Iowa City, Iowa, has issued 35,000 shares of new common stock at $7.75 a share, the first public offering of securities by the firm. Officers of the firm include Ray T. Siman, vice president and treasurer, and Charles U. Kelly, who heads purchases and sales as vice president and secretary. President of Protein Blenders is C. Urban Kelly.

Program Planned To Test NRC Nutrient Standards

CHICAGO—Plans have been announced for a research program to test the nutrient requirements for domestic animals as prepared by the National Research Council.

The American Feed Manufacturers Assn. recently called attention to the project and at the same time urged participation by members of the feed industry with facilities to carry out controlled tests.

Well known and widely used in the feed industry are the reports on "Nutrient Requirements for Domestic Animals" which are prepared by the Committee on Animal Nutrition of the NRC. The committee and subcommittees review data for the different species of animals and poultry and develop nutrient standards which are considered to be of the greatest degree of reliability, based on available knowledge.

At the same time, the AFMA points out, the committee also is interested in determining whether these standards are proving to be effective in practical application.

To further this aim, a special subcommittee on testing nutrient requirements has been appointed. The chairman is Dr. George K. Davis of the University of Florida, Gainesville.

Tests Being Organized

At present Dr. Davis' committee is organizing a series of tests of NRC requirements in the field of chick and pig nutrition. The general plan is to compare standard ration, formulated to meet NRC requirements, with any other similar ration more or less highly fortified, as proposed by each individual collaborator in the tests.

"The occasion," said AFMA, "will permit an unusual opportunity for participants to check their own special theories about fortification of chick and pig rations."

Persons interested in the program may obtain information on the conditions of the test and composition of the NRC ration by writing to: Dr. G. K. Davis, Department of Animal Husbandry and Nutrition, University of Florida, Gainesville, Fla.

Stilbestrol Hikes Lamb Gains Without Lowering Carcass Grade in Iowa Test

AMES, IOWA — Diethylstilbestrol fed orally at the rate of 2 mg. per head per day improved gains and feed efficiency without reducing carcass quality in a lamb feeding trial this fall at Iowa State College.

The results of the lamb fattening test were reported at the third annual Iowa Flock and Lamb Feeders Day program held Dec. 9 at the college.

The stilbestrol in this test was fed in a mixed ration in which ground corn cobs replaced part of the hay.

In this same test, lambs receiving the cob mixture without stilbestrol gained slightly less than lambs receiving a standard ration of shelled corn, soybean oil meal and alfalfa hay. In tests last year, lambs on the mixture had done as well as animals on the standard ration.

The addition of fat to the mixture did not improve weight gains or feed efficiency, the researchers noted in connection with another aspect of the experiment.

Reporting on another experiment, Iowa researchers said that implantation of 250 mg. of progesterone and 10 mg. of estradiol in fattening ewe lambs produced faster and more efficient gains but poorer carcasses. As part of this same experiment with ewe lambs, it was found that lambs fed two levels of stilbestrol showed slower and less efficient gains than the control lambs. Also, it was reported, implanting ewe lambs with testosterone propionate had no significant effect on rate of gain or feed efficiency.

Stilbestrol, Fat, Cobs

In the test involving stilbestrol, fat and corn cobs in lamb fattening rations, three different basal rations were fed. One was a standard ration of shelled corn, soybean meal and alfalfa hay. The two other basal rations were fed as a mixture with ground corn cobs being used as the roughage. With the lots receiving the mixture, about .75 lb. of chopped hay was fed per lamb per day in addition to a full feed of the mixture. The second basal ration included 20 lb. ground cobs, 15 lb. molasses, 58.7 lb. cracked corn, 5 lb. soybean meal, 1 lb. urea, .25 lb. bone meal and 0.5 lb. vitamin A concentrate. The third basal ration had 3% hydrogenated fat added at the expense of the corn.

Stilbestrol was added at a level of 2 mg. per lamb per day in the rations containing the hormone-like material.

Reporting on this experiment was Dr. W. H. Hale.

The report was a progress report covering the results of the first 63 days of the experimental feeding period. The carcass data reported covered the heavy end of lambs in the test. A final report is to be made later.

Lambs on the standard ration showed a daily average gain of .40 lb. and a feed efficiency of 812 lb. of feed per 100 lb. of gain. The corresponding figures on the cob mixture without any additions were .38 lb. and 876 lb. Thus, the lambs receiving the cob mixture gained slightly less than the lambs receiving the standard ration.

The lambs receiving 2 mg. stilbestrol and the hay-cob ration had a daily average gain of .48 lb. and a feed efficiency of 719 lb. of feed per 100 lb. of gain. Thus, they outgained the control lambs on the corresponding ration without the hormone by 26%. Also, these lambs showed better gains and feed efficiency than the lambs on the standard ration.

The addition of fat to the mixed ration did not increase gains compared to the same mixture without fat. However, when stilbestrol at the rate of 2 mg. per head per day was added to the ration containing fat, the rate of gain was increased 13%. The daily rate of gain for lambs on the mixture plus fat and stilbestrol was .43, compared with .38 for the fat addition alone. Feed efficiency also was better.

Carcass Grades

There were no differences in carcass grades between controls and stilbestrol-fed animals. However, the dressing per cent was somewhat lower in the case of lambs receiving stilbestrol. For example, the dressing percentage for lambs on the hay-cob mixture ration without additions was 49.9. For lambs on the same ration plus stilbestrol, it was 48.4.

The researchers used 240 lambs in this experiment. They divided them into heavy and light replications providing two lots for each treatment. The heavy lots were marketed Nov. 28 after 7 days on feed. Dr. Hale reported that all of the mixed cob and hay ration lots that were marketed, including those fed fat and stilbestrol, included 10 lambs which graded choice and 10 which graded good. The lot receiving the standard ration had 11 that graded choice and nine that graded good.

Implants

Bruce Taylor of the Iowa State College staff reported on the experiment with progesterone - estradiol, testosterone and stilbestrol given to fattening ewe lambs.

The researchers noted that a limited amount of work at the Iowa station, mostly with wether lambs, had indicated that oral use of stilbestrol had possibilities in producing faster and more economical gains with lambs, and the use of a testosterone pellet implantation had looked promising for ewe lambs in a trial in 1953-54. Another station had reported increased gains from implantation of lambs with 250 mg. of progesterone and 10 mg. of estradiol. The new trial reported recently was conducted to gain additional information on these compounds in fattening ewe lambs fed in groups of 20 head each.

The lambs were fed cracked corn, soybean meal and alfalfa hay.

The lambs implanted with progesterone - estradiol pellets gained 14.6% more than the control lots and produced 100 lb. of gain on 16% less feed than the lambs in the control lot. But all carcasses in the control lot classified as lamb carcasses while only half of those in the progesterone lot classified as lambs. Mr. Taylor said the pellet appeared to hasten maturity. There were no choice carcasses in the progesterone-estradiol lot and 15% graded utility, with the rest good. One fourth of the control lambs graded choice and the rest good.

Ewe lambs fed either 1.54 or 2.67 mg. of stilbestrol per head per day gained 12.5% less than the control lambs and produced gains less efficiently. The cost of gains was $1 to $1.50 per cwt. higher. The stilbestrol-fed ewe lambs produced 33% yearling carcasses, indicating more rapid maturity in this group, too. The stilbestrol-fed lambs were more difficult to keep on feed and consumed less feed per day.

The feeding of stilbestrol in this experiment had no significant effect on dressing per cent or cooler shrink.

Mr. Taylor said the lambs implanted with the 30-mg. pellet of testosterone propionate were almost the same as the control lot in feed consumption, efficiency, rate of gain and carcass grade.

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Feed Developments Reported At North Carolina Conference

By HENRY S. FRENCH
Feedstuffs Editorial Staff

RALEIGH, N.C.—A line-up of important speakers brought the latest developments in animal feeding to more than 200 members of the feed industry at the annual Animal Nutrition Conference at North Carolina State College, Raleigh, Dec. 8-9. The meeting was sponsored by the North Carolina State College, the North Carolina Feed Manufacturers Assn. and the North Carolina Department of Agriculture.

W. D. Edwards, Edwards Bros. Milling Co., Rutherford, N.C., was elected president of the North Carolina Feed Manufacturers Assn. at the annual meeting of the organization, held during the nutrition conference. Other officers elected are: M. H. Murray, Mocksville (N.C.) Feed Mills, vice president, and J. Louis Maxwell, Jr., Goldsboro (N.C.) Milling Co., secretary-treasurer. Named to the board of directors, with terms to expire in 1958, are: Gil Brauch, Ralston Purina Co., Charlotte, N.C., and A. W. Koon, Spartan Grain & Mill Co., Spartanburg, S.C. Chairman of the nominating committee was W. G. Crawford, Goldsboro Milling Co.

The nutrition group was welcomed to the campus by Dr. H. A. Stewart, assistant director of research at North Carolina State College. The response was given by D. E. Huntington, Spartan Grain & Mill Co., retiring president of the NCFMA. Chairman of the morning session Dec. 8 was Dr. E. W. Glazener, head of the poultry department of NCS.

Joe Chrisman, Alfalfa Dehydrators Assn., Kansas City, Mo., discussing the use of dehydrated alfalfa meal in formula feeds as the first speaker, pointed out that vitamin values are receiving renewed attention in the modern high energy rations. Dehydrated alfalfa meal, he said, continues to be an economical source of vitamin A activity, xanthophyll (for poultry), vitamins E and K, and folic acid. Evidence of unidentified growth factors in alfalfa exists.

The talk by Mr. Chrisman was prepared for delivery by Dr. H. S. Wilgus, director of research for the Peter Hand Foundation, Chicago. Dr. Wilgus was detained in Chicago by jury duty.

While there has been a trend to reduce the amount of dehydrated alfalfa in poultry feeds and in pig creep feeds and starters, owing to its low energy content, bulk and lack of palatability, one way to overcome the disadvantages is to demand from the dehydrator a product with a higher concentration of the leafy portion, said Mr. Chrisman. This might be a product with 20% or higher protein, less than 20% fiber, and 150,000 to 200,000 units of vitamin A per pound.

"Dehydrated alfalfa has demonstrated unique qualities," said Mr. Chrisman, "to justify its use in virtually all types of ruminant rations. It provides not only valuable protein and calcium and vitamin A, but also vitamin E and unidentified factors, both mineral and organic, required for optimum functioning of microorganisms."

Energy-Protein Ratios

"In recent years," said Dr. G. F. Combs, University of Maryland, College Park, "there has been a reexamination of the proper ratios of energy and protein in poultry feeds. In former years of increasing production, energy was increased while protein has not advanced. A proper balance will give better feeding results and permit a minimum of energy and protein in feeds."

Dr. Combs listed several factors which may affect the calorie-protein levels in feeds. Some of them are: (1) Protein quality, (2) growth rate, (3) production rate, (4) finish desired, (5) temperature, (6) relative cost of energy and protein, and (7) composition values employed.

In talking further, Dr. Combs said that methionine definitely is a part of the feeding picture, since this material is related to energy and protein requirements. He also pointed out that fats added to feeds bring good gains, and said he cannot see any ceiling, metabolically, for adding fats to feeds.

Chairman of the afternoon session was E. W. Constable, North Carolina Department of Agriculture, Raleigh. Dr. Robert H. White-Stevens, research division, American Cyanamid Co., Pearl River, N.Y., told of the scope and organization of the broiler industry. This industry, he said, is the Horatio Alger of agriculture. It has expanded nearly forty-fold in as many years—from under 35 million in 1935 to nearly 1,200 million in 1955. However, it did not just happen, for it occurred as the result of complete integration of many phases of production and research, possibly one of the most significant illustrations of voluntary teamwork extant.

After discussing most of the phases of the broiler industry, Dr. White-Stevens turned to forecasting. Probably the greatest opportunity ahead in nutritional science lies in the study of interrelations, particularly of nutrition as a whole in relation to disease, he said. Also, he continued, "whereas the past 50 years has been the era of the vitamin, we believe the next 50 may well prove to be the era of the protein and of its components, the amino acids."

He also foresees a greater turn to plant proteins for animal feeds. Synthetic hormones will be developed to cover all hormone functions of importance in animal production. Antibiotics will change the entire concept of nutrition and disease, and open new vistas of research in animal production. The poultry industry will continue to play a leading role in feeding the expanding population. The geneticist, the physiologist, engineer and economist will continue to lead the way, but the poultrymen of America must follow as rapidly as possible, Dr. White-Stevens stated.

Mineral Interrelationships

Dr. G. Matrone, NCS, discussed some mineral interrelationships in livestock feeds. The right amount of minerals is good, he said, but too much is harmful. Elements are put into the feed for nutritive requirements, he observed, but sometimes more is added for insurance. This extra bit, he believes, might lead to trouble. This excess of one might throw the others off and retard absorption and utilization. The destruction of vitamins might be hastened and rancidity develop, and, since minerals have no energy, too many of them might decrease the total energy included in the ration.

Later in the day, Dr. Combs talked

(Continued on page 52)

FOR THE GOVERNOR'S DINNER—Gov. Edmund S. Muskie (center) of Maine is shown as he received a prize "Cacklebird" for the Blain House Thanksgiving feast from Col. Lewis F. Greene and Arthur J. McLoughlin of the Penobscot Poultry Co., Inc., Belfast, Maine. Mr. McLoughlin formerly was with the Aready Farms Milling Co.

Ontario Feed Men Express Concern Over Plight of Eastern Feeders

TORONTO — A large attendance featured the annual convention of the Ontario Retail Feed Dealers Assn. in Toronto Dec. 7.

A telegram from the gathering was forwarded to the Dominion-Provincial Agricultural Conference, in session at Ottawa at the time, expressing the concern of the Ontario feed dealers over the serious predicament of the Ontario feeder as a result of the disparity in costs of production between the livestock producers in the prairie province and those in the east.

Because western farmers are unable to dispose of grain through normal channels they are willing to sell some wheat at exceptionally low prices to feed lot operators in the area, it was pointed out.

Dr. T. Lloyd Jones, principal, Ontario Veterinary College, Guelph, was the principal speaker during the morning session. He stressed the need for understanding and good working arrangements between veterinarians and the feed merchants. He admitted that in the past this relationship had not been all that might be desired, but he stated that while there had been a lot of ground to cover, there had been a marked improvement in recent years. The present training of veterinarians tends towards greater cooperation with the feed merchants, and even greater improvement in this respect is anticipated.

Fortunate People

At the annual luncheon Norman Moore, director, public relations, Cockshutt Farm Equipment, Ltd., Brantford, was the featured speaker on the topic, "We Are a Fortunate People." He outlined the development of Canada from the very early days of the fur trader and pioneer to the present time. He referred to the great production of agriculture, oil, minerals, water power and other natural resources and urged all listening to him to "sell" Canada to the younger generation so that they might fully appreciate the opportunities open to them in this young, thriving country.

The film, "After the Harvest," prepared by the Chicago Board of Trade, featuring the merchandising of grain and other commodities, was well received at the opening of the afternoon session.

A. S. Campbell gave a report on the group fire insurance plan which had been adopted by the association three years previously on a trial basis. Mr. Campbell announced that because of the very fine experience, it would be possible to reduce premiums in future, and that such reduced rates would become effective as renewals were made. It was pointed out at the meeting that the plan had saved member firms an average of 30% on their insurance premiums, and that around 300 firms and plants were insured under the plan.

Mr. Campbell mentioned that there had been a great improvement in housekeeping methods and in other efforts on the part of management and employees to reduce fire hazards in the insured plants, and that the cooperation of the firms in this regard had been instrumental in bringing about the reduction in rates which he announced.

Ralph Everett, Empire Sales Training, Inc., Buffalo, gave a down-to-earth talk in which he suggested that more attention be paid by feed dealers and their employees in merchandising their products. He felt they should know, and be able to explain to their customers, what the products they sell would do for the customer. He also suggested that efforts be directed towards developing a better class of customer, one which would use more feed to the best advantage. Mr. Everett indicated that in his opinion a lot of difficulty in connection with credit could be avoided if the dealer and his customer would work out a definite plan of payment at the time the goods were sold, rather than to wait for several months afterwards as so often is the case.

The meeting accepted the recommendation of the subcommittee set up to explore the possibility of conducting an employee training school. As a result plans will now be formu-

Study of Marketing Margins Ordered

WASHINGTON—U.S. Department of Agriculture studies of marketing margins and farm production costs have been ordered stepped up by Ezra Taft Benson, secretary of agriculture.

"We know that some margins are too great and not justified," Mr. Benson said, "although we recognize that in some instances processors and distributors have increasing costs which they must pay.

"While farmers' prices for food products have been declining, average retail prices of foods have actually risen slightly."

He pointed out that the failure of retail food prices as a whole to reflect the decline in farm food products during the past year is recognized by USDA as a real obstacle to a solution of the farm surplus problem.

"I have discussed this vital problem with the President," the secretary continued. "We are urged that we must definitely determine whether or not prices paid by consumers contain improper or excessive marketing charges and profits. Farmers are entitled to receive the very maximum for their products through efficient marketing service."

lated for the holding of such a school, possibly next October for a period of two days. The object of the course is to assist employees to better understand the formulation and mixing of feeds, merchandising and advertising.

A. Searle Leitch, chairman, board of governors, Winnipeg Grain Exchange, was introduced to the meeting and extended good wishes on behalf of the Winnipeg Exchange.

The following officers were elected: President, George L. Fuller, Brant Feed and Seed, Ltd., Brantford; first vice president, N. E. Lindsay, Ottawa Valley Grain Products, Ltd., Renfrew; second vice president, Hans Steiger, Millbank (Ontario) Flour & Feed; treasurer, F. M. Early, Early Farm Supply, Brampton. Murray H. McPhail continues as secretary of the group, with headquarters in Toronto.

In the evening the grain and allied trades were hosts to the feed dealers at cocktails, dinner and entertainment.

25 Complete Hubbard Feed Training School

MANKATO, MINN. — Twenty-five men from four states recently completed a feed training school offered at the Hubbard Sunshine Research Farm by the Hubbard Milling Co. The November school was the fourth conducted during 1955, and more are scheduled for next year.

Faculty of the school is composed of Hubbard personnel: George Patrias, director of research and nutrition; Vernard E. Lundin, director of public relations; Dale Snyder, sales manager; Quentin Marsh, assistant manager of the feed division, and Don Madden and Barney Schorer, sales supervisors.

Members Admitted to Minneapolis Exchange

MINNEAPOLIS — Admitted to membership in the Minneapolis Grain Exchange Dec. 8 were the following: John R. Bloom, F. H. Peavey & Co.; Tom C. Veblem, Cargill, Inc.; Winfred L. Golden, Archer-Daniels-Midland Co.; William F. Bast, Leval & Co., Inc.; Norman J. Kautz, Pillsbury Mills, Inc., and Edward J. Young, Jr., Cosmo Brokerage Co. of Clayton, Mo.

Milk Cows Fed Concentrates at Record High Rate

WASHINGTON — The amount of grain and other concentrates fed to milk cows has been continued at a record high rate for the season.

The rate per cow on Dec. 1 was at a new high as milk cows were shifted to full winter rations, the U.S. Department of Agriculture pointed out in its latest crop report.

On Dec. 1, crop reporters fed their herds an average for the U.S. of 5.9 lb. of concentrate ration per head daily, 6% more than a year earlier and 13% above the 1944-53 average for the date. The seasonal increase from the high Oct. 1 rate this year, however, was less than average.

USDA said abundant grain supplies on farms, cold stormy weather and improved price relationships contributed to the high rate of concentrate feeding.

In the eastern, north central and southern sections of the country, the amount of concentrate fed per milk cow was the highest for Dec. 1 on record, while in the West, the previous high was equaled.

USDA noted that dairy product-feed price ratios were much more favorable for feeding than a year earlier. Feed prices were considerably lower, it was pointed out.

Milk production on farms during November totaled 8,724 million pounds—3% above last year's high for the month. Seasonally, production declined less than usual because of liberal feeding which offset cold weather and the snow cover in northern sections. Output declined 6% from October, compared with an average decline of 10%. Milk production per cow on Dec. 1 was 4% above the previous high.

PLANT BEING BUILT

POCAHONTAS, IOWA—Construction has been started on a new feed plant for the Farmers Cooperative Co. The building will be located adjacent to and north of the cooperative's frame elevator building. The T. E. Ibberson Co. of Minneapolis is in charge of construction.

Commander Begins Elevator Project

KANSAS CITY—The Commander-Larabee Milling Co. will add one million bushels storage capacity to its grain elevator at the Kansas City mill of the company, it was announced this week. Ground-breaking ceremonies for the addition will be held this week and the elevator will be completed about June 1 in time to receive new crop wheat.

The new elevator will increase storage capacity of the Kansas City plant to 2,250,000 bu., according to J. W. Stewart, vice president and manager of the firm's southwestern division. The addition will be located south of the present grain tanks.

The elevator will be of reinforced concrete with tanks about 100 ft. high. Jones-Hettelsater Construction Co., Kansas City, is the contractor.

A division of the Archer-Daniels-Midland Co., Minneapolis, Commander-Larabee is the nation's sixth largest flour milling company, operating plants at Minneapolis and Montgomery, Minn., Kansas City and St. Joseph, Mo., and Hutchinson, Kansas, having a capacity of 36,240 sacks per day. With the new addition total elevator capacity will be approximately 10,500,000 bu.

A BIG E FOR HENS

WASHINGTON — The hen is a more efficient egg producer than 25 years ago. According to the U.S. Department of Agriculture, the rate of lay per hen during 1954 was 184 eggs per layer. During 1930 the average was only 121 eggs. Last year 100 hens produced as many eggs as 152 hens produced in 1930. The U.S. laying flock averaged 354,765,000 hens in 1954, only 10% larger than 25 years ago, but total egg production jumped 67%. In other words, 85% of the increase in production resulted from a higher rate of lay and only 15% from the increase in number of layers.

UNIVERSAL CARDBOARD CHICK FEEDERS

No. 1 Pat.

No. 2 Pat.

No. 1 and No. 2 for Baby Chicks—500—$30.00, 1000—$55.00. Also No. 3, same type as No. 1 and No. 4, same type as No. 2, both for Growing Chicks and Poults—500—$49.00, 1000—$90.00. Order now for immediate or future delivery.

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TO OUR MANY FRIENDS THROUGHOUT THE ENTIRE NATION

SINCERE BEST WISHES

FOR A

Merry Christmas

AND A

Prosperous New Year

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CEREAL BYPRODUCTS CO.

Chicago Buffalo Minneapolis St. Louis Kansas City Omaha

Season's Greetings

and

Best Wishes

for 1956

Millers TO THE FEED TRADE

FRUEN MILLING COMPANY

MINNEAPOLIS 5, MINNESOTA

USDA Reports Laying Flock Is Down 2% From Year Ago

WASHINGTON—The U.S. Department of Agriculture's latest crop report confirms earlier indications that the nation's laying flock on Jan. 1 will be slightly smaller than a year earlier.

The number of potential layers on farms on Dec. 1, the crop report showed, was down 2% from a year earlier. Another figure, the average number of layers during November, also was off 2%.

These figures indicate that the Jan. 1 laying flock will be about 2% smaller than a year ago. However, as pointed out previously, good price relationships are expected to stimulate raising of chicks for flock replacement in 1956, and later in 1956 the numbers of layers and potential layers likely will show an increase.

While the number of layers at the start of the year will be down somewhat, the rate of lay is expected to show a continued increase, about offsetting the dip in layer numbers.

Egg prices in 1956 are expected to average somewhat lower than in 1955, USDA has pointed out previously.

Potential Layers

As for the number of birds which make up the current market for feeds—USDA reported that potential layers (hens and pullets of laying age plus pullets not of laying age) on farms Dec. 1 totaled 428,221,000. This was 2% less than a year earlier and 4% below average.

Holdings were smaller in all parts of the country except in the east north central states and the West, where they showed no change. Decreases from a year ago were 7% in the south central states, 5% in the south Atlantic region and 1% in the north Atlantic and west north central states.

Pullets not of laying age on farms Dec. 1 totaled about 39 million—about the same as last year. Increases of 20% in the West and 2% in the north Atlantic region were offset by decreases of 7% in the south central region, 4% in the south Atlantic states, 2% in the east north central states and 1% in the west north central states.

During November, the nation's laying flock averaged 385,675,000 layers—2% less than in November last year. All regions of the country showed decreases except the east north central states, where numbers equaled last year.

The seasonal increase in layers from Nov. 1 to Dec. 1 was 2%, same as last year.

Prices received by producers for eggs in mid-November averaged 43.4¢ doz., compared with 42.9¢ in mid-October and 33.9¢ a year earlier.

Egg Production

Farm flocks laid 5,186 million eggs in November, compared with 5,116 million in November last year. This was a record high production for the month and was 37% above the 1944-53 average.

During the first 11 months of the year, 61,888 million eggs were produced, a record high number and 4% above last year.

The rate of egg production in November was 13.4 eggs, compared with 13.1 last year. The rate per layer was at a record high in almost every section of the country. The rate per layer on hand during the first 11 months of this year was 174 eggs, compared with 170 last year.

Spencer Kellogg Net Profit Shows Big Rise Over Year Ago

BUFFALO — Spencer Kellogg & Sons, Inc., reported its net profit for the first quarter of its fiscal year ended Nov. 19 exceeded the company's earnings in the entire previous fiscal year ended Aug. 27.

Howard Kellogg, Jr., president, cautioned, however, that "hand-to-mouth" buying by certain users of our end products precludes determination of future earnings at this time."

Net profit in the latest period amounted to $390,405, equal to 32¢ a share. This compared with $326,149, or 27¢ a share in the preceding entire fiscal year when losses in certain quarters reduced total earnings.

Net sales in the latest period totaled $22,645,727 compared with $24,437,296 a year earlier, when earnings amounted to $351,607, equal to 29¢ a share.

"Soybean operations early this fall were on a fairly satisfactory basis," Mr. Kellogg said. "Flaxseed crushing remains healthy. Raw materials in both instances are in plentiful supply, contrasted with the lack of soybeans in processors' hands a year ago.

"Our new research center in suburban Cheektowaga is now functioning as a completed unit. We look forward to the accomplishments of this important phase of our continuous efforts to maintain our leadership in the field of vegetable oils and their co-products."

V. C. Dean to Manage New Nutrena Division

MINNEAPOLIS — Vern C. Dean has been named manager of the newly created Peoria division of Nutrena Mills, Inc., it was announced this week by J. C. North, president.

Nutrena has one of America's most modern feed mills under construction at 66 Sanger St. in Peoria. Production at this mill is scheduled to begin early next summer.

Mr. Dean, who is 37, moves into his new post with a long record of management responsibility for Nutrena. For the past 1½ years he has been a special assistant to the president, working with a variety of company projects. Prior to that he spent six years as manager of Nutrena's dog food division.

Mr. Dean is an alumnus of the University of Kansas. His home town was Clifton, Kansas, and he was a long-time resident of Kansas City before moving to Minneapolis in 1953.

EWES WEIGHT GAIN

URBANA, ILL.—A mature ewe of average size and condition at breeding time should gain 25 to 30 lb. before she lambs, say scientists at the University of Illinois.

Hens and Pullets of Laying Age, Pullets Not of Laying Age and Potential Layers on Farms, Dec. 1

Year—	North Atlantic	East North Central	West North Central	South Atlantic	South Central	Western	U.S.
Hens and Pullets of Laying Age on Farms, Dec. 1 (thousands)							
1944-53 (average)	60,444	76,453	107,037	36,077	68,420	36,506	384,937
1954	73,549	80,226	103,669	37,467	65,220	40,933	398,064
1955	72,655	80,120	101,299	35,487	59,131	40,175	388,867
Pullets Not of Laying Age on Farms, Dec. 1 (thousands)							
1944-53 (average)	9,468	10,211	16,799	7,955	14,394	4,961	63,778
1954	7,855	8,134	8,254	5,946	8,857	3,513	39,538
1955	8,013	8,031	8,152	5,708	8,237	4,214	39,354
Potential Layers on Farms, Dec. 1* (thousands)							
1944-53 (average)	68,813	86,664	123,836	44,032	82,803	41,467	447,715
1954	81,404	88,360	110,903	43,413	72,077	44,446	437,602
1955	80,667	88,151	109,451	41,195	67,368	44,389	428,221

*Hens and pullets of laying age plus pullets not of laying age.

Kenneth S. Hart

K. S. Hart to Head Kansas City Board of Trade

KANSAS CITY—Kenneth S. Hart, Hart Grain Co., will become president of the Kansas City Board of Trade in the new year. Mr. Hart's election was assured this week by the withdrawal of E. C. Meservey, Jr., Meservey-O'Sullivan Grain Co., who had been nominated as Mr. Hart's opponent in the annual election of the exchange Jan. 4.

Mr. Hart served as first vice president of the board in the past year. W. B. Young, Goffe & Carkener, Inc., automatically moves up to this post from that of second vice president.

Candidates for the office of second vice president are R. Hugh Uhlmann, Standard Milling Co., and Wayne A. Forcade, Midcontinent Grain Co.

Nominated for the arbitration committee are G. R. Bicknell, Farmers Union Jobbing Assn.; John Blowers, Standard Milling Co.; J. S. Geisel, Geisel Grain Co.; A. L. Handley, Wolcott & Lincoln, Inc.; E. A. Hogan, Earl A. Hogan Co.; Horace W. Johnston, Simonds-Shields-Theis Grain Co.; J. J. Lynch, Uhlmann Grain Co.; W. L. McMahon, Klecan Grain Co., and J. W. Whitacre, Commander-Larabee Milling Co.

(Nominees for the board of directors and for the directorate of the Grain Clearing Corp. were listed in Feedstuffs' Dec. 10 issue, page 4.)

Designation of S. C. Loan Area Extended

WASHINGTON—The U.S. Department of Agriculture recently announced it is extending for another year the designation of 19 counties in South Carolina as an area where the Farmers Home Administration may make emergency loans to farmers whose crops were damaged by drouth and other adverse weather conditions.

The entire state formerly had been designated as an emergency loan area through Dec. 31, 1955, due to prolonged drouth conditions. The counties in which the recent action extended the designation through Dec. 31, 1956, are: Bamberg, Beaufort, Berkeley, Calhoun, Charleston, Chesterfield, Clarendon, Colleton, Dillon, Dorchester, Georgetown, Jasper, Kershaw, Lexington, Marion, Marlboro, Orangeburg, Richland, Williamsburg.

The department said farmers in the area had suffered serious losses to crops resulting from the continuation of the drouth into the later spring, and excessive rainfall during the summer and early fall of 1955.

Emergency loans are made to finance continued normal operations. To be eligible, a farmer must be unable to obtain the credit he needs from other local sources.

Improved Soybean Meal Demand Seen After Jan. 1

MINNEAPOLIS—An improvement in the demand for cash soybean oil meal after Jan. 1 is predicted by Fred H. Hafner, director of soybean meal sales, General Mills, Inc., in a market letter issued this week.

"The price of soybean oil meal cannot improve materially as long as a large increment of surplus meal hangs over the market," he states. "When the demand-supply situation gets into balance a price adjustment on the up-side can be expected. However, the exact time of a market price recovery is difficult to predict."

Official statistics plus some estimates indicate a Jan. 1 supply of soybeans totaling 262 million bushels, Mr. Hafner says. This compares with stocks a year earlier of 261 million bushels. Assuming that this estimate is correct, supplies would be just adequate to meet the projected demand for the January-September period, he adds. Here are his estimates of requirements: Processing, 22 million bushels a month for nine months, 198 million bushels; exports, 5 million bushels a month or 45 million total, and seed requirements, 30 million.

There are a number of factors which support this disappearance estimate, including the fact that stocks of beans at processing plants are large and will be processed, he says. Also, many cottonseed plants will start processing soybeans as soon as all available cottonseed has been processed. Bean supplies in the south central states are ideally located for export and should continue to move into those channels as long as they are reasonably priced, he states.

He cited these factors which could result in a sharply reduced disappearance: Curtailment of production by processors if margins deteriorate further; reduced export demand for U.S. soybeans as a result of competition from other countries; impoundings of substantial quantities under the loan if prices are unsatisfactory.

"Needless to say there is plenty of room for speculation as to which factors will emerge as the more important market-making factors," Mr. Hafner comments.

In addition to the forecast concerning improved demand for soybean meal, Mr. Hafner predicts that soybeans will be available for purchase in sufficient quantity to insure continuous operations by processors, that export demand is expected to continue at the average rate of 5 million bushels a month and that demand for oil at current prices is expected to remain good, with not much of a price advance anticipated.

Pfizer Plans Vigo Plant Addition

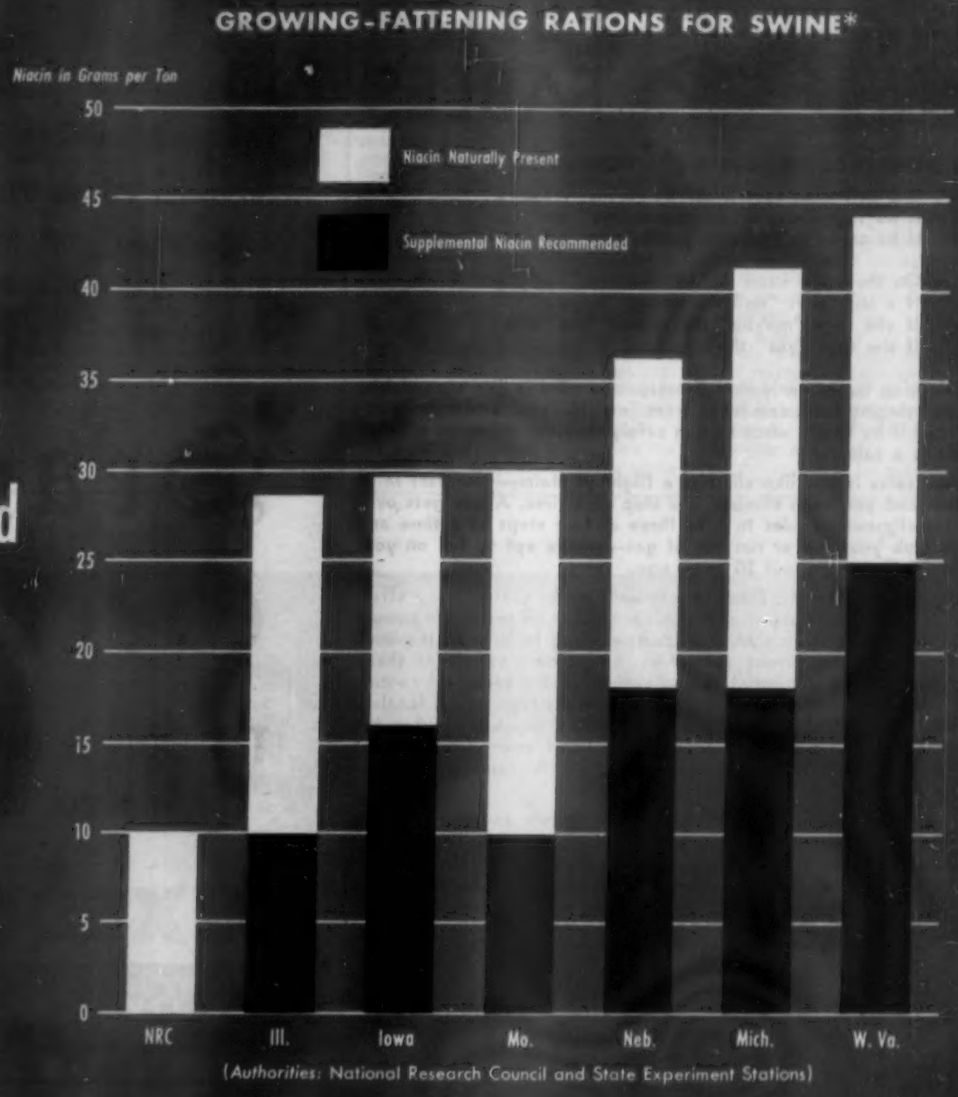
TERRE HAUTE, IND. — Production capacity for animal feed supplements will be more than doubled as a result of a major plant addition to be built at the Vigo plant of Chas. Pfizer & Co., Inc., the company announced this week.

Charles W. Smith, plant superintendent, said construction will start in February and is scheduled to be completed about June 1.

The addition will consist of a two-story wing containing the newest automatically controlled blending equipment and a warehouse. The new production unit, Mr. Smith said, will help meet increasing demand for Pfizer's vitamin, antibiotic and Vigofac supplements.

J. J. Thompson, manager of the company's agricultural division, commented that the new addition is "another step in the long range plan to provide the best and fastest service available to farmers through feed manufacturers."

Animal Nutrition Authorities Recommend HIGHER NIACIN LEVELS



Formulations recently suggested by recognized nutrition authorities indicate a need for increased niacin levels in some commercial rations. Check the data in the above graph when calculating niacin levels in your feeds.

If you need more niacin, order MERCK NIACIN or one of the MERCK MULTIVITAMIN MIXTURES containing *niacin*. These are available for all types of livestock and poultry rations—designed for precision in handling and economy in shipping and storing.

*CHARTS AVAILABLE. Write today for complete set of free charts showing recommended levels of niacin, riboflavin, and calcium pantothenate in rations for chickens, turkeys, and swine.

NEW FACILITIES AT ST. LOUIS, exclusively devoted to the feed industry, enable Merck to offer supplements in a wide range of specifications to meet your needs. By making Merck—the world's foremost producer of vitamins—your prime source of supply for these products, you are sure of getting the best quality available. You also save time and simplify purchasing.

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UNCLE TOM'S FEED FABLES

THE DIFFERENCE BETWEEN A POLITICIAN AND A LADY?

If a politician says "yes" he means "maybe."
If he says "maybe" he means "no" and
If he says "no" he's no politician!—

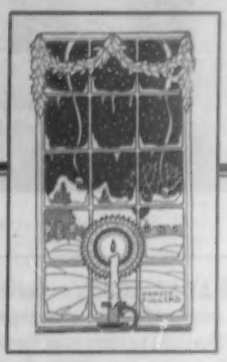
On the other hand
If a lady says "no" she means "maybe"
If she says "maybe" she means "yes" and
If she says "yes" she's no lady.

A salesman learns early that a prospect's mind is like a pendulum that keeps swinging back and forth, from "no" to "yes" and from "yes" to "no," and if he knows when he can safely stop the swing on a "yes" he has made a sale.

Makin' sales is just like climbin' a flight of stairs—you start in at the bottom and you keep climbin' one step at a time. A guy gets over anxious sometimes and tries to take three or four steps at a time and when you stub your toe or run out of gas—you're apt to fall on your face. I found that out about 30 years ago.

I'd been callin' on Mr. Black for several months every Friday afternoon and it generally took just about an hour to get his order. He bought the horse feed for a big ice and fuel company and he divided the business between three different companies, and mine was one of them. I was just a kid and got impatient goin' through the same old routine each time. This particular Friday I wanted to see a high school football game and I figured I'd just turn it on and hurry things up, so when the old gentleman told me to come in I didn't even sit down. I just started jumpin' up that flight of sales steps without waitin' for him to follow along and I said:

"Well, Mr. Black—I don't think I need to waste any more of your time. I'm sure you know what you want to do." He said, "That's right young man, I do know what I want to do. That will be all." And he turned his back to me. It took me a long time to get that business back. I didn't walk, I crawled up the steps for quite a while after that.



This year, more than ever, we hope that you and yours will share a Christmas full of joy and serenity and a New Year fulfilling the promise of peace on earth, good-will toward men.

MATT WALSH
SHELLEY WALSH
JOHN STRATE

WALSH GRAIN CO.

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AGAIN the time approaches when all have the pleasure of exchanging holiday greetings with our good friends.

So, to our Tuxedo Dealers, whose loyalty, cooperation and friendship, we value highly and work always to deserve, we extend the

Season's Greetings

The Early & Daniel Co.
Cincinnati, Ohio

Our 74th Year

TUXEDO FEEDS

FOR LIVESTOCK and POULTRY

NOW—do all Your Cleaning, Faster-Easier with the **VERSATILE**

Heavy Duty
TORNADO® VACUUM CLEANER
(4 CLEANING MACHINES IN 1)

You've never seen such outstanding vacuum performance until you've tried the Tornado Series "80" vacuum cleaner.

Suction speeds up to 325 M.P.H. pick up dirt or liquids without any conversion. Sealed ball bearing motor can't overheat even under continuous operation. Three sizes in ¾, 1 or 1½ H.P. Removable motor unit adapts to many other uses.

USE IT ALSO AS:

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FEEDSTUFFS
LEADER IN THE FIELD

CAPITAL COMMENT

By John Cipperly

WASHINGTON — The Bureau of Census recently reported that the 1954 farm census showed a decline of approximately 600,000 farm units since the 1950 census.

The decrease is general, but there is emphasis on the decline in the eastern half of the U.S. and in the South, where declines were above the national average loss of farm units of 11.1%.

In analyzing its figures, the Census Bureau says that half of the decrease occurred in farms of less than 50 acres, and about two thirds of the decrease in farm numbers since 1950 occurred in farms with a value of products sold of less than $1,200.

The Census Bureau definition of a farm is a place of more than three acres where the annual value of agricultural products sold, exclusive of home gardens, amounts to $150 or more.

The decline in farm numbers occurred in every state except Florida, where a slight increase was registered. The decline took place in all but 180 of the 3,067 counties in the U.S.

The decline in farm numbers as shown in this Census Bureau report is merely a prolongation of a long term trend, with the exception of the mid-depression year of 1935, when the trend was reversed. The sharpest drop in U.S. farm numbers was shown in the 1940 census.

For the last three census tabulations of 1945, 1950 and 1954, the decline in farm numbers has been increasing in arithmetical proportion, running at an approximate ratio of 2-4-6. Percentage-wise, the declines in the census years 1945, 1950 and 1954 have been approximately 4, 8 and 12%.

The Census Bureau report naturally sticks to the bare statistical data and does not attempt to weigh the results against collateral inferences that may be drawn.

It is first necessary to measure the drop in the number of farm units against the national farm acreage for the same period covered by the Census Bureau.

U.S. Department of Agriculture statistical material discloses that even with heavy acreage restrictions on such crops as wheat, cotton, tobacco and rice, the planted acreage in 1954 amounted to 336,954,000 acres for 59 important crops, as compared with 341,164,000 planted acres in 1953 and 345,153,000 during the 10-year period of 1943-52. These years included the war years when farmers were given every incentive to produce at the maximum and included the years when the 90% of parity support for the basic crops of wheat, cotton, rice, corn, peanuts and tobacco took hold.

Returning to the Census Bureau farm census report, it is interesting to note that the drop in farm numbers started its precipitate decline in 1940, the peak of loss of farm numbers, and was again reaching for a record rate of decline as of the 1954 census.

(Continued on page 74)

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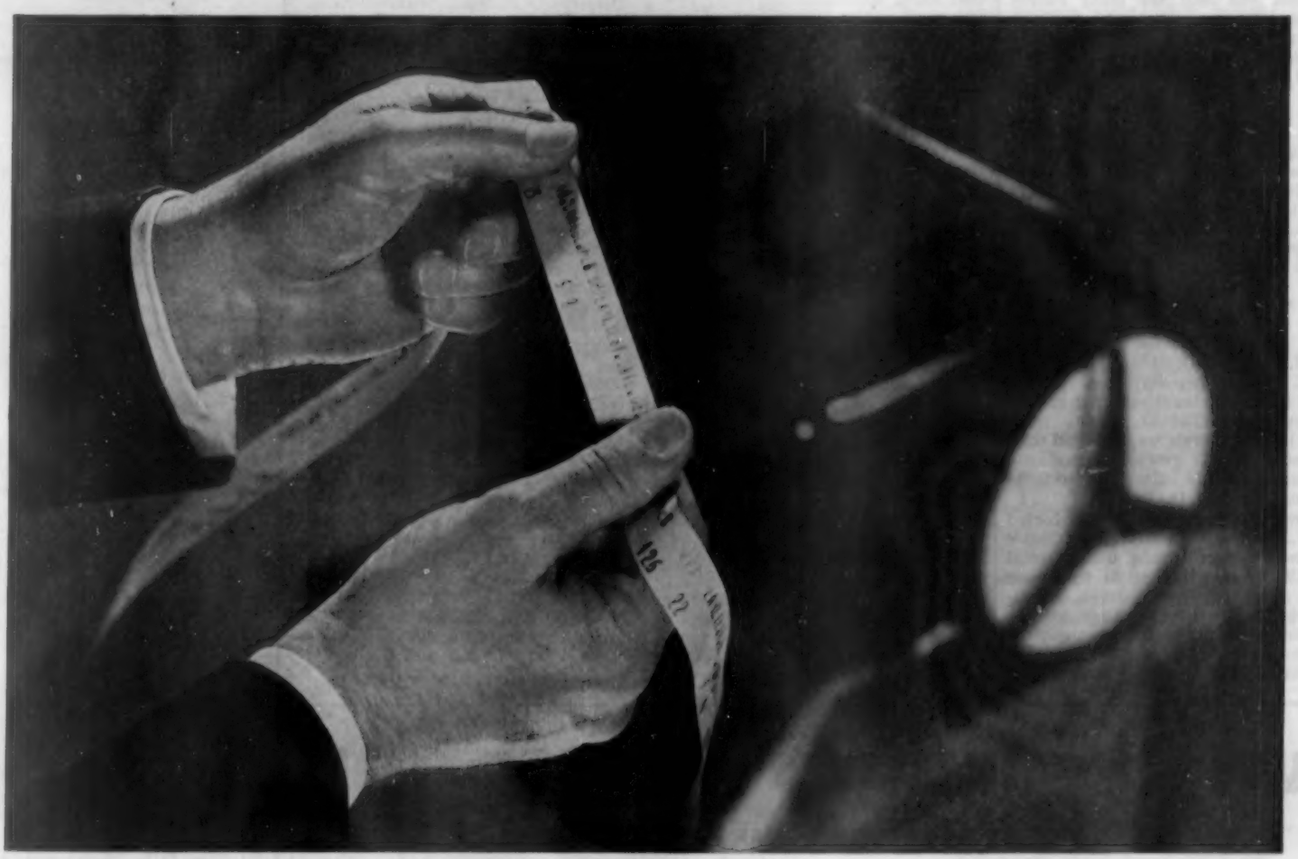

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Animal Production Society Meeting—II

Scientists Report New Findings in Animal Nutrition Research Work

***EDITOR'S NOTE:** The following article is the second in a series of three articles reviewing reports on new findings in animal nutrition research which were presented at the recent annual meeting of the American Society of Animal Production in Chicago. This article includes summaries of reports at the meeting on research dealing with two general subjects—protein sources and minerals. The first article, which appeared in the Dec. 10 issue of Feedstuffs, covered energy and hormones, and the third article, which will appear next week, will include reviews of research on pelleting, antibiotics and miscellaneous subjects. Scientists from experiment stations throughout the country gathered at this year's meeting of the society to present and hear the many papers on significant new research findings. Many industry men also attended the meeting. Some 900 persons were on hand for the various sessions.*

* *

PROTEIN SOURCES

Pigs—R. F. Sewell of Georgia reported similar growth and feed conversion for pigs fed rations with plant type proteins as the only variable. Three protein supplements were compared as follows: (1) soybean oil meal (SBOM) alone, (2) ¾ SBOM and ¼ peanut meal, (3) ½ SBOM and ½ peanut oil meal, (4) ¼ SBOM and ¾ peanut meal, (5) ½ SBOM and ½ degossypolized cottonseed meal, (6) ½ SBOM and ½ peanut meal and ½ degossypolized cottonseed meal. The basal ration of ground yellow corn (72.5%), alfalfa meal (5%) and minerals was fortified with Aureomycin (18 gm/ton), riboflavin, pantothenic acid, niacin as well as vitamins A and D.

Two feeding trials were conducted by L. F. Tribble and W. H. Pfander of the Missouri Station, using a total of 128 crossbred pigs, to determine the effect of protein level, Aureomycin and feed intake upon growth performance and carcass quality. From weaning to 100 lb., the pigs on high protein (16%) made 12.7% faster gains than the low protein (12%) fed pigs. However, the low protein lots averaged 6.5% faster gains from 100 to 200 lb. Aureomycin increased gains by 6.5%, with most of this improvement observed from weaning to 100 lb. Limiting the feed intake reduced the rate of gain 26.7%; however, these pigs made 5.2% more efficient gains than the full fed pigs. The lean cuts were 1.6% greater and the fat 4.5% less for carcasses from the high protein fed pigs as compared to the low protein fed pigs. The carcasses from the limited fed pigs contained 2.8% more lean cuts and 6.3% less fat than for the full fed pigs. Aureomycin had no apparent effect on carcass composition.

Evidence supplied here indicates that fairly appreciable levels of peanut meal and/or degossypolized cottonseed meal may be used effectively with soybean oil meal in well fortified rations for growing and fattening pigs from weaning to market weight. However, since the success of these blends of plant type proteins depends pretty much on the soya supplying a large share of the amino acid lysine, so deficient in corn and other grains, it is important not to use an overheated soybean oil meal.

Overheating must also be avoided in processing the peanut meal and cottonseed meal used in these combinations, the reason being that overheating is known to reduce the availability of the lysine as well as methionine and cystine, not to mention other nutrients in these protein supplements.

It would seem that the ration for fattening pigs should be modified if full feeding is objectionable from the carcass viewpoint rather than resort to limited feeding since a rapid gain is so desirable and usually more profitable in producing pork.

Lambs—A series of three metabolism trials with 18 wether lambs was conducted by W. R. Woods and associates of the Kentucky Agricultural Experiment Station to determine the effect of varying levels of protein and cerelose on the utilization of mature timothy hay by sheep. The protein levels were 6.9, 10.9, and 13.6% with the required level, respectively, of soybean oil meal supplementing low quality timothy hay. Cerelose was added in amounts of 0, 3.3 and 6.2% of the ration. The apparent digestibility of dry matter, organic matter, crude protein, nitrogen free extract and energy increased with increasing levels of protein. However, the protein level had no significant effect upon the apparent digestibility of crude fiber. Cerelose at the 6.2% level reduced the digestibility of protein at all protein levels. However, the addition of cerelose had no effect on the digestibility of the other constituents except nitrogen free extract, which was increased significantly by the cerelose additions.

University of Missouri researchers, W. C. Ellis and associates, working with lambs, studied the utilization of nitrogen from various sources. A purified basal ration composed of cellulose (Solka-Floc), starch, cerelose, lard, minerals and vitamins A and D was fed to the lambs in a series of digestion trials in which urea, gelatin, casein, soybean protein (Drackett), and blood fibrin (added to supply approximately 7% protein) were compared as sources of dietary nitrogen. The results showed that soybean protein and blood fibrin had a significantly greater biological value than gelatin and casein, which in turn were superior to urea, and, similarly, nitrogen retention was greatest in the case of soybean protein and blood fibrin, intermediate for gelatin and casein, and lowest for urea. The authors said that "these studies demonstrate the superior utilization of 'true' protein, as compared to urea, by sheep." They also suggested tryptophan as a possible limiting amino acid in the microbial protein formed in the casein and gelatin supplemented sheep.

J. C. Meiske and co-workers, of Michigan State University, also reported on a comparison of different nitrogen sources for growing-fattening lambs. Fifty 75-lb. lambs were used

(Continued on page 16)

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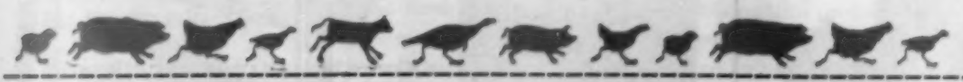

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*"Stabilization of Iodine in Salt and Feedstuffs" by F. F. Johnson and E. R. Frederick, SCIENCE, Oct. 6, 1950, Vol. 92, PP315-316.

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Meat Demand in South Projected to 1975

WASHINGTON—Per capita consumption of meat in the South is expected to increase about 28% by 1975. Under conditions of full employment this would mean a rise from an estimated 122 lb. in 1950 to 156 lb. in 1975. This projection is contained in a research study issued by the U.S. Department of Agriculture in cooperation with 10 state agricultural experiment stations in the South.

Aggregate demand for meat in the South is expected to rise from an estimated 3.8 billion pounds in 1950 to 6.6 billion pounds by 1975. This projection assumes 1951-53 level of prices and price relationships, a 40% increase in population, and a high level of employment.

The report points out that further research is needed to estimate the South's capacity and willingness to produce enough livestock to meet its rising demand for meat. Research is also needed to determine the extent to which the additional requirements can and will be provided by southern slaughterers and packers, the report concludes.

A single free copy of the report, "Prospective Demand for Meat and Livestock in the South," Marketing Research Report No. 99, can be obtained form the Marketing Information Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington 25, D.C.

NEW FEED MILL

MINOT, N.D.—A new feed mill which will convert barley into feed pellets has been started by the Farmers Union Grain & Supply Co. The new plant will be an all concrete and steel structure with a capacity of 120 tons a day. It is being built behind the main building of the company in Minot.

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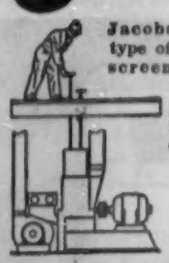

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A. E. Staley Company Reports Greater Net Sales in Nine Months

DECATUR, ILL.—The A. E. Staley Manufacturing Co., corn and soybean processors, realized a net profit of $3,799,369 for the nine months ending Sept. 30, A. E. Staley, Jr., president and board chairman, has announced.

The Staley nine months' report is being issued this year as a result of the company's recent shift of its fiscal year from the calendar year to an Oct. 1-Sept. 30 year.

Net sales of the company for the nine months covered in the report were $111,617,731 compared with $104,847,849 in the first nine months of 1954. The net profit for the period is equal to about 71% of 1954's $5,315,176 net profit.

Earnings per share during the nine months were $2.08. Dividends of 25¢ were paid during each quarter, following the pattern of previous years.

Since closing the books on its new fiscal period, the Staley board of directors on Nov. 8 voted a regular quarterly dividend of 25¢, an extra dividend of 35¢ and a 2% stock dividend. This action, Mr. Staley said, will be reflected in reports of the next year on the basis of the company's new fiscal period.

Mr. Staley pointed out in the nine months' statement that supplies of corn and soybeans were adequate during the period and indications are that with near record harvests, the supply of grain again will meet all normal demands.

The company's corn division operated at a somewhat higher level than in the corresponding period of the preceding year, the Staley president said.

"Operating results in the soybean division were not satisfactory, but there was an improvement over the results achieved in the corresponding period a year ago. Processing margins for much of the time during the nine months were less than full costs, but the relationship was less favorable than it was in the previous period," Mr. Staley stated.

The current large crop of soybeans has favorably affected processing margins, Mr. Staley said. As of the end of the nine months' period, the company was making a small operating profit in its soybean operation, which has not been the case in the last several years.

The company's oil refinery established an all-time production high, showing a 12% increase in the quantity of oil processed over the corresponding nine-month period of the prior year.

The working capital of the company, the report states, climbed to $27,680,084 from $26,769,573 during the nine months.

YOUNG MAN OF THE YEAR

INDEPENDENCE, MO.—James E. May, vice president of the May Grain Co., Independence, one of the long established feed companies in this area, recently was presented with the distinguished service award of the Independence Junior Chamber of Commerce as the outstanding young man of the community. Mr. May, who is 27, was president of the Junior Chamber in 1954 and has taken an active part in civic affairs.

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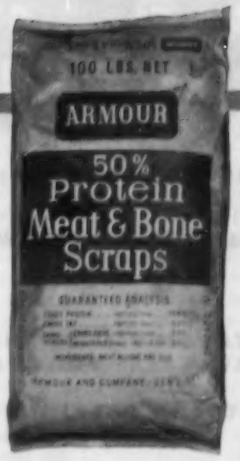

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ANIMAL NUTRITION

(Continued from page 12)

in a feeding trial in which a basal ration containing 7.13% crude protein and composed of ground wheat straw, ground corn, molasses, dehydrated alfalfa meal, trace mineralized salt and dicalcium phosphate was supplemented with urea, biuret or crude biuret to raise the level of protein equivalent to 9.10%. Average daily gains and feed efficiency of the lambs were improved significantly by the addition of each of the three forms of nitrogen, and also when soybean oil meal replaced a part of the corn in the low-protein basal ration. These investigators reported they found no significant differences among the lots of lambs fed the various nitrogen sources and that in their experiment urea, biuret or crude biuret were satisfactory sources of supplemental nitrogen for growing-fattening lambs. The results of limited urea toxicity studies with lambs showed that a level of 25 gm. of urea per 100 lb. body weight caused labored breathing and the lambs were slow in eating, while a level of 28.5 gm. per 100 lb. body weight caused convulsions within 50 minutes, the lambs bloated, and death occurred at the end of two hours. In comparison, a level of 23 gm. per 100 lb. body weight in steers has been found to cause toxicity and death.

The Missouri and Michigan studies, it was noted, confirm the opinion of most ruminant nutritionists that nonprotein nitrogen compounds such as urea give best results when used to replace part but not all of the protein in the ration, and that "true" or natural protein as supplied by oil seed meal or other protein rich feedstuffs is needed in ruminant rations for optimum performance of the animals.

In another series of digestion and nitrogen balance trials with wether lambs, University of Tennessee investigators M. C. Bell and co-workers compared the effects of feeding urea and stilbestrol on ration digestibility and retention of calcium, phosphorus and nitrogen. A fattening type ration was used, with cottonseed meal as the basic protein source. In rations in which urea replaced cottonseed meal as the nitrogen source, statistically significant increases in the digestibility of crude protein and decreases in the digestibility of nitrogen free extract (carbohydrate) and ether extract (fat) were recorded. Urea feeding had no effect on the retention by the lambs of calcium, phosphorus or nitrogen. Stilbestrol had no effect on the digestibility of ration nutrients, but it resulted in statistically significant increases in the retention of nitrogen, calcium and phosphorus.

Steers—Research workers at the University of Illinois, E. E. Hatfield and associates, reported on a nitrogen balance study with steers in which urea, biuret and soybean oil meal were compared as sources of dietary nitrogen. The average digestibility coefficients, in order, for urea, biuret, and soybean oil meal, were: dry matter 60.2, 60.1, and 62.4%; nitrogen 66.2, 62.0, and 65.0%; ether extract (fat) 36.8, 37.1, and 39.3%; crude fiber 61.4, 60.8, and 66.1%; and nitrogen balance, as percent absorbed nitrogen retained, 48.8, 42.3, and 49.1%. Soybean oil meal promoted higher digestibility values which were statistically significant in the case of dry matter, crude fiber and also for nitrogen balance. For three periods, an average of 12.8 gm. of biuret per day appeared in the urine, as compared with a total biuret intake of 90 gm. per day. There was no indication of a carry-over effect on biuret excretion.

A different protein source, ammoniated cane molasses, was tested in rations for cattle and sheep by Oklahoma A&M researchers A. D. Tillman and associates. In one experiment with steers, ammoniated cane molasses (16% protein equivalent) gave lower digestibilities for protein and organic matter and decreased nitrogen retention as compared with cottonseed meal when both products were included in 12% protein fattening type rations of equalized energy and nitrogen content at levels to supply 10% of the concentrate nitrogen. In a second experiment with steers, ammoniated cane molasses products with either 16 or 33% protein equivalent gave approximately the same results when used to supplement prairie hay as the entire ration. A third experiment, conducted to compare ammoniated cane molasses with regular cane molasses, when both products were fed as supplements to prairie hay, showed that either 1.5 or 3 lb. of regular cane molasses per day decreased fiber digestion whereas the ammoniated cane molasses did not. Two digestion experiments were conducted with sheep in which ammoniated cane molasses, added to a low protein ration, showed approximately 49% digestibility of its nitrogen and 72% nitrogen retained, when the product was added to a higher protein ration. It was also reported that feeding the ammoniated cane molasses caused abnormal stimulation or excitation in the animals and some deaths resulted. Other research workers have observed these same effects from feeding ammoniated molasses products, and until this unfavorable reaction to these products in animals is eliminated, these products are not considered safe for feeding.

In experimental studies conducted at Kansas State College, reported by A. C. Hughes and co-workers, ammoniated hydrol (corn molasses) was tested as a source of nitrogen for wintering steers. The ammoniated hydrol (12% protein equivalent) replaced one half of the soybean oil meal protein in a basal ration composed of soybean oil meal, 1 lb.; milo grain 2 lb.; and sorghum silage fed free choice. Average daily gains were 1.55 lb. for steers fed the basal ration as compared with 1.35 lb. for the other lot of steers fed the basal ration with ammoniated hydrol replacing one half the soybean oil meal protein. A digestion experiment was then conducted, using a basal ration of soybean oil meal, 1 lb.; corn, 1 lb.; hydrol, 2.8 lb.; and sorghum silage, 36 lb. When ammoniated hydrol was substituted for 50 and 100% of the soybean oil meal protein, no significant differences were found between the digestibilities of crude protein, nitrogen free extract, ether extract and crude fiber. It was found that blood ammonia levels were higher in those steers fed ammoniated hydrol.

Artificial rumen—Belasco of E. I. du Pont de Nemours & Co. found that urea utilization and the production and distribution of the volatile fatty acids in vitro were dependent on the

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The ONLY single Feed additive that

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HELPS POULTRY RAISERS:

prevent coccidiosis

prevent worms
(tapeworms and large roundworms)

prevent hexamitiasis
(in turkeys)

stimulate growth
(in both chickens and turkeys)

You'll build business fast with Polystat fortified feeds because more and more poultrymen, broiler operators and turkey raisers are finding Polystat effective, safe, practical and profitable—*want* feeds containing widely advertised Polystat.

POLYSTAT CUTS LOSSES .... due to coccidiosis; large roundworms and tapeworms; *prevents* hexamitiasis in turkeys.

POLYSTAT STIMULATES GROWTH .... even with Vitamin B_{12} and Antibiotics in the feed. Improves feed conversion. Promotes 9.6% faster growth on ¼ pound less feed, per pound of live weight, on the average! Improves quality; redder combs, yellower skin, better feathering. Increases production of laying flocks. *It pays for itself.*

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amount and type of carbohydrate used as the energy source. Starch was better than cellulose as an energy source in promoting the utilization of urea and the production of fatty acids. At high input levels, starch and dextrose inhibited cellulose digestion. In combinations with cellulose, dextrose was as effective as comparable amounts of starch in urea nitrogen fixation but yielded higher levels of valeric and butyric acid.

Biuret (heated urea) was found to release ammonia at a slower rate than urea (and should therefore be less toxic to animals) in a University of Illinois test with sheep. In spite of slower ammonia release, biuret nitrogen was found to be retained by lambs as well as urea nitrogen.

T. V. Hershberger and coworkers of Ohio reported that according to their experimental data with the artificial rumen, the rate of growth of rumen microorganisms, as determined by the rate of protein synthesis and/or cellulose digestion, is directly proportional to the potentially available ammonia nitrogen. The availability of the nitrogen from ammoniated molasses, 15% protein equivalent; ammoniated invert molasses, 33% protein equivalent; ammoniated corn cobs, 14% protein equivalent; and ammoniated furfural residue, 29% protein equivalent was compared with the availability of urea nitrogen. The availability of the nitrogen in the ammoniated products was observed to be related to the free ammonia nitrogen content. The remaining nitrogen appeared to be unavailable to the rumen microorganisms. Digestibility trials were carried out with sheep to determine the availability of the nitrogen in ammoniated invert molasses for rumen microorganisms. The results showed that less than one third of the nitrogen in ammoniated invert molasses was available to the animal.

MINERALS

Pigs — Iowa State investigators studied the effectiveness of various swine phosphorus assay techniques. They found that the ash content of soft tissues (ear and tail) and the phosphorus content of both skeletal and soft tissues proved unsatisfactory as a measure of the availability of dietary phosphorus. Most accurate results were obtained by using ash content of femurs and ribs, and femur X-ray opacity. Growth and serum phosphatase activity were found to be satisfactory criteria if not too much precision is required. These latter two meaasurements can be determined without sacrificing the animals.

Using synthetic rations on weanling pigs, Plumlee, Kennington and Beeson of Purdue University determined the phosphorus requirements of growing pigs. Under the conditions of their test, it appeared that growing pigs need about .45% of inorganic phosphorus in their ration for good growth and to prevent crooked legs and skeletal weakness characteristic of phosphorus deficiency. In this experiment mono-calcium phosphate and imported rock phosphate were reported to have given the best results of six supplements tested at a low level of phosphorus intake. Using radioactive calcium phytate, it was learned that phytin phosphorus is probably poorly utilized by the pig. Only 1.95% of PO_4 phosphorus was excreted by the pig as compared to 61.2% of the calcium phytate phosphorus.

Lewis and associates at the University of Wisconsin studied the parakeratosis problem in swine. Lewis reported that high calcium (1.29%) in a corn-soybean oil meal type ration hastened the onset of parakeratosis and decreased the growth rate. Zinc added to the high calcium ration at a level of 50 p.p.m. increased the growth rate and delayed the onset of parakeratosis, but did not prevent it. Zinc at both the levels of 100 and 500 p.p.m. cured parakeratosis in pigs fed the high calcium rations. The 100 p.p.m. level seemed to be more satisfactory than the 500 p.p.m. level. Injected zinc at a level of 1 mg. to 2 mg. per pound of body weight daily also cured the high calcium induced parakeratosis. However, the injected zinc caused sensitive areas where injected. Therefore, injection is not recommended for the control of parakeratosis unless absolutely necessary.

Cattle and Sheep—In a test conducted at Kansas State College, it was found that trace mineral supplements did not increase the rate of growth of Hereford heifers but did affect the blood (increased size of erythrocytes and corpuscular hemoglobin concentration). In some instances trace mineral supplementation resulted in improved hair coats and general appearances of the calves. High level feeding of calcium (a Ca:P ratio of 10:1) with the phosphorus requirement being met, impaired the growth rate of calves, but caused no significant changes in the blood. Alfalfa hay fed at the rate

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For Largest Cattle Feeding Operation in Kansas

New 350,000 bushel Bolted Steel ELEVATOR-MIXER

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These 12' x 40' Columbian mixing tanks with steel hoppered bottoms provide an efficient drive-through feed mixing operation for Emporia Elevator & Feeding Co.

Classifying and blending grains is becoming more and more the country elevator operators' problem. A typical answer is found in the McKenna Grain Company Columbian elevator tanks at Kingman, Kansas. Erected in 1955, this 90,000 bushel installation is equipped with 12' x 24' Columbian classifying tanks.

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Combining wheat and grain storage with the feeding of 10,000 head of cattle is a profitable operation for Emporia Elevator & Feeding Co. of Emporia, Kansas. The new Columbian 350,000 bushel bolted steel grain elevator and mixing equipment enables this enterprising company to store grain and tailor-mix their cattle feed economically and efficiently. The ten 26' x 72' bolted steel tanks were erected in time for the 1955 Kansas wheat harvest. Columbian engineers also made the preliminary drawings, designed foundations and installed the mixing tanks and equipment. The elevator is designed for easy expansion by adding tanks.

Whether you need a single tank or a complete elevator installation, you can depend on Columbian for durable, economical, tight bolted steel tanks and efficient grain handling equipment. Columbian tanks, because of their strength and tightness have also been widely adopted for storing dehydrated alfalfa under inert gas pressure. Thousands are in use for storing grains, seed, coffee, rice, peas and beans.

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STEEL, Master-Crafted by Columbian... First for Lasting Strength

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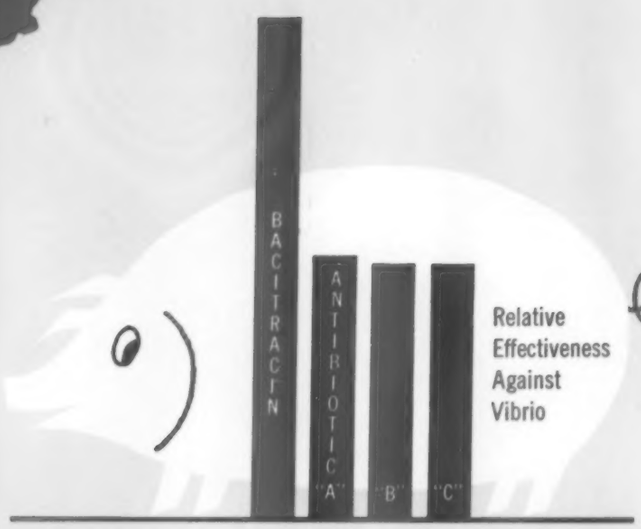
EFFECTIVELY CONTROLS THESE DANGEROUS BACTERIA IN POULTRY AND SWINE



Bacitracin Stops Secondary Invaders

During periods of sickness or stress, resistance is lowered and secondary bacteria invade poultry and swine. The gram-positive bacteria called Streptococcus and Staphylococcus are the most numerous of the secondary invaders. Another organism, Clostridium produces toxic breakdown materials in the intestinal tract. Bacitracin is the most effective antibiotic against these troublemakers because it controls more strains of these bacteria than other feed antibiotics. In test after test, Bacitracin has proved effective in stimulating appetites, and controlling the secondary invaders that follow air-sac disease, blue comb, infectious sinusitis, and non-specific enteritis.

Bacitracin Fights Black Scours

A hog trouble-maker called Vibrio is often responsible for the outbreaks of black (bloody) scours. Bacitracin is the most effective antibiotic in fighting this gram-negative bacteria because it controls more of the disease causing strains of Vibrio bacteria. Tests show that Bacitracin is effective in many swine dysenteries where other medication has failed.[1] Additional tests point out that when swine scours are treated with Bacitracin, the recovered animals are more likely to become thrifty.[2]

(1) Graham, R., Boley, L. E., and Woods, G. T.: Bacitracin in Necrotic Enteritis of Swine. North Am. Vet. 31:736.

(2) Boley, L. E., Woods, G. T., Hatch, R. D., and Graham, R.: Studies on Porcine Enteritis. II Experimental Therapy with Sulfathalidine, Sulfamethazine, Sodium Arsanilate, and Bacitracin in a Natural Outbreak of Swine Dysentery. Cornell Vet. 41:231.

BACITRACIN MOST EFFECTIVE IN CONTROLLING THESE HARMFUL BACTERIA

THESE CHARTS show the relative effectiveness of Bacitracin and three other antibiotics in controlling some of the more common bacteria that invade animals during periods of stress and disease. Bacitracin is a most effective antibiotic in fighting secondary invaders because it controls more bacterial strains in each group. That's why high-level feeds made with BACIFERM are so effective in combatting dangerous bacteria.

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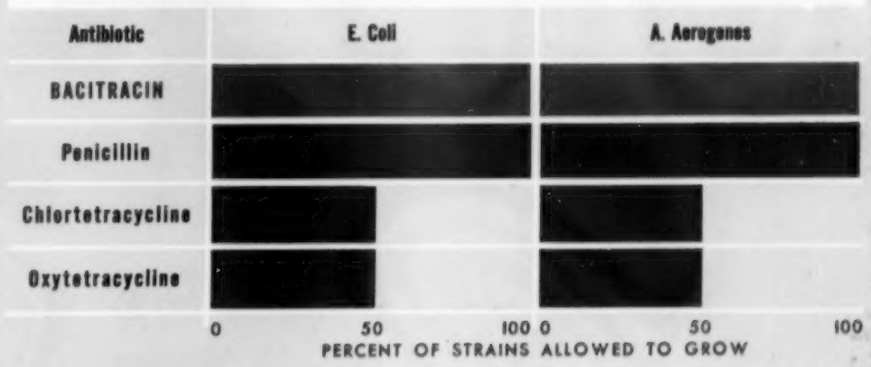
SELECTIVELY BENEFITS THESE VITAMIN-PRODUCING BACTERIA IN POULTRY AND SWINE

SOME ANTIBIOTICS inhibit the growth of beneficial bacteria but Bacitracin does not. Its selective activity controls dangerous bacteria, yet allows helpful bacteria to flourish. For example, the charts show that bacitracin allows the beneficial gram-negative bacteria *E. coli* and *A. aerogenes* to grow. Other antibiotics interfere with the growth of these important vitamin-producing bacteria in the intestinal tract. For the right selective activity, choose BACIFERM for your high-level antibiotic feeds.

BACITRACIN ALLOWS MAXIMUM GROWTH OF VITAMIN-PRODUCING BACTERIA



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Bacitracin, penicillin, and tetracycline-type antibiotics used at high levels show equal results on a gram-for-gram basis. But only BACIFERM gives maximum performance and cuts fortification costs at least 30%.

EXTRA VALUE

...FURNISHES BONUS VITAMINS AT NO EXTRA COST

All BACIFERM antibiotic supplements contain selectively-active Bacitracin *plus* naturally-produced B-vitamins, high protein, vitamin K and unidentified growth factors.

EFFECTIVE

...ON FARM AFTER FARM FOR POULTRY AND SWINE

Results show that BACIFERM stimulates appetites, keeps animals eating when disease or other stress conditions occur. BACIFERM gets more animals to market faster, by hastening recovery and reducing mortality.

BACIFERM combination antibiotic supplements available

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Cows that grazed on pastures containing high amounts of fluorine showed that there was a rapid uptake of fluorine in the bones, and when these animals were removed periodically to a control pasture, the bone fluorine content decreased gradually, but had not dropped to the constant level at the end of 2.5 years. Cows ingesting fluorine (50-600 p.p.m.) from raw rock phosphate stored less fluorine in the bone than animals receiving the same amount from sodium fluoride.

C. S. Menzies and associates of Kansas State College reported on beef cattle feeding experiments designed to test phosphoric acid as a source of phosphorus for ruminants. Four lots of 10 Hereford heifer calves each, averaging 515 lb., were fed a wintering ration of 1.5 lb. soybean oil meal and 0.2 lb. molasses on bluestem pasture. Phosphoric acid was added to the molasses and this mixture mixed with the soybean oil meal for two lots in which the phosphoric acid supplied 4 and 8 gm. phosphorus daily. A third lot was fed 8 gm. phosphorus daily from steamed bone meal, and the fourth lot, with no phosphorus supplementation, served as the control lot. The average daily gains during the 162-day wintering period averaged .41 lb. for the controls, .42 lb. for the lot fed phosphorus from steamed bone meal, and .48 and .53 lb. for the lots fed 8 and 4 gm. phosphorus from phosphoric acid.

Blood phosphorus levels were maintained at the initial level in all the phosphorus-supplemented lots, but dropped markedly in the control lot of steers. There were no significant differences in average daily gains during a subsequent summer grazing period, and blood phosphorus levels in the control of steers returned to normal after grass began to grow. In a phosphorus balance study with lambs, the addition of phosphorus from phosphoric acid to a low phosphorus ration resulted in increased phosphorus retention in the lambs. The phosphoric acid supplements were highly palatable and caused no ill effects on the animals.

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General Mills uses feed bags sewn with Super Cordura rayon for greater strength...lower cost

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Strong, uniform thread of "Super Cordura" gives sewn ends extra strength—yet makes bags easier to open. And the cost is less than ordinary threads.

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Consider the advantages of bags sewn with Du Pont "Super Cordura" the next time you place an order for multi-walls . . . and use "Super Cordura" in closing your own filled bags.

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- Lower cost
- Greater strength
- Improved sewability
- Reduced thread inventory
- Uniform properties

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WASHINGTON—A loan has been approved by the Small Business Administration in the amount of $40,000 for the Arlington (Neb.) Dehydrator Co., and $50,000 for the Damar (Kansas) Grain Co., Inc.

8 new tests by leading colleges . . .

show how

DRIED WHEY

in broiler feeds steps up profits 1½¢ to 8¢ per bird; improves feed conversion

TREATMENT	AVE. 10 WK. WT (LBS.)	FEED GAIN
None	2.25	3.14
3% Molasses Distillers Solubles (MDS)	2.52	3.07
3% Fish Solubles (FS)	2.82	2.74
3% Dried Whey (DW)	2.84	2.87
3% FS & 3% DDS	2.77	2.97
3% DW & 3% FS	3.04	2.81

Dried whey at 3% level, in combination with molasses solubles and fish solubles, increases profit over feed cost.

RESULTS USING 3% DRIED WHEY AND MDS

TREATMENT	INCOME	FEED COST	INCOME OVER FEED COST
Basal	$562.50	$353.25	$209.25
3% MDS	630.00	388.35	241.65
3% FS	705.00	389.44	315.56
3% DW	710.00	414.89	285.11
3% FS & 3% MDS	692.50	415.46	277.04
3% DW & 3% FS	760.00	438.20	321.80

Per 1,000 birds

TREATMENT	AVE. 10 WK. WT. (LBS.)	FEED GAIN
Basal	3.59	2.66
3% Condensed Fish Solubles (FS)	3.68	2.62
3% Dried Whey (DW)	3.69	2.54
3% Distillers Dried Solubles (DDS)	3.65	2.61
3% FS & 3% DW	3.81	2.54
3% FS & 3% DDS	3.74	2.50
3% DW & 3% DDS	3.85	2.61
3% FS & 3% DW & 3% DDS	3.95	2.54

Cost of basal ration figured at $5.00 cwt Dried whey calculated on a corn replacement basis; fish solubles and distillers dried solubles on replacement of some corn and some soybean oil meal Broiler price at 25¢ per pound.

Dried whey at 3% level, either alone or in combination with carriers of other unidentified factors, increases profit over feed cost.

RESULTS USING 3% DRIED WHEY AND DISTILLERS SOLUBLES

TREATMENT	INCOME	FEED COST	INCOME OVER FEED COST
Basal	$897.50	$477.45	$420.05
3% FS	920.00	485.96	434.04
3% DW	922.50	477.09	445.41
3% DDS	912.50	478.21	434.29
3% DW & 3% FS	952.50	496.43	456.07
3% FS & 3% DDS	935.00	472.18	462.82
3% DW & 3% DDS	962.50	512.45	450.05
3% DW & 3% FS & 3% DDS	987.50	516.70	470.80

Per 1,000 birds

NOW! We're selling the "dried whey in broiler feeds story" for you in these broiler publications across the country: Broiler Growing, Eastern Breeder and Broiler Grower, Broiler World, Georgia Poultry Times, Broiler Journal.

Again, test upon test demonstrates that broiler rations with 2½% to 3% dried whey far outstrip non-whey feeds in profit performance.

A few cents worth of whey in a bag of broiler feed makes birds pack on more meat and substantially steps up profits.

This fact is shown again by eight recent college feeding trials.

In these experiments dried whey in well-fortified basal rations boosted income over feed cost by up to 8¢ per bird. Growth was speeded as much as 0.59 lb. per bird in 10-week growing periods.

Note in the first table at left how dried whey also improved feed conversion (from 3.14 to 2.87); jumped income over feed cost per 1,000 birds from $209.25 with basal alone to $285.11 with whey added to basal.

Even when the basal was further fortified with fish solubles and distillers dried solubles in other tests, DRIED WHEY stepped up profits as much as $20 per 1,000 broilers.

These impartial studies show again that whey makes a good ration better — at a cost low enough to add a good profit.

If you finance broilers or sell to broiler growers, that's a fact worth knowing. It means that dried whey, in many cases, can spell the difference between profit and loss on a given batch of broilers.

Write for complete details of these feeding results and for samples and quotations on Peebles' spray-dried whey. It's available the year around and always uniform from season to season.

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show how

DRIED WHEY

in broiler feeds steps up profits 1½¢ to 8¢ per bird; improves feed conversion

TREATMENT	AVE. 10 WK. WT (LBS.)	FEED GAIN
None	2.25	3.14
3% Molasses Distillers Solubles (MDS)	2.52	3.07
3% Fish Solubles (FS)	2.82	2.74
3% Dried Whey (DW)	2.84	2.87
3% FS & 3% DDS	2.77	2.97
3% DW & 3% FS	3.04	2.81

Dried whey at 3% level, in combination with molasses solubles and fish solubles, increases profit over feed cost.

RESULTS USING 3% DRIED WHEY AND MDS

TREATMENT	INCOME	FEED COST	INCOME OVER FEED COST
Basal	$562.50	$353.25	$209.25
3% MDS	630.00	388.35	241.65
3% FS	705.00	389.44	315.56
3% DW	710.00	414.89	285.11
3% FS & 3% MDS	692.50	415.46	277.04
3% DW & 3% FS	760.00	438.20	321.80

Per 1,000 birds

TREATMENT	AVE. 10 WK. WT. (LBS.)	FEED GAIN
Basal	3.59	2.66
3% Condensed Fish Solubles (FS)	3.68	2.62
3% Dried Whey (DW)	3.69	2.54
3% Distillers Dried Solubles (DDS)	3.65	2.61
3% FS & 3% DW	3.81	2.54
3% FS & 3% DDS	3.74	2.50
3% DW & 3% DDS	3.85	2.61
3% FS & 3% DW & 3% DDS	3.95	2.54

Dried whey at 3% level, either alone or in combination with carriers of other unidentified factors, increases profit over feed cost.

Cost of basal ration figured at $5.00 cwt Dried whey calculated on a corn replacement basis; fish solubles and distillers dried solubles on replacement of some corn and some soybean oil meal Broiler price at 25¢ per pound.

RESULTS USING 3% DRIED WHEY AND DISTILLERS SOLUBLES

TREATMENT	INCOME	FEED COST	INCOME OVER FEED COST
Basal	$897.50	$477.45	$420.05
3% FS	920.00	485.96	434.04
3% DW	922.50	477.09	445.41
3% DDS	912.50	478.21	434.29
3% DW & 3% FS	952.50	496.43	456.07
3% FS & 3% DDS	935.00	472.18	462.82
3% DW & 3% DDS	962.50	512.45	450.05
3% DW & 3% FS & 3% DDS	987.50	516.70	470.80

Per 1,000 birds

NOW! We're selling the "dried whey in broiler feeds story" for you in these broiler publications across the country: Broiler Growing, Eastern Breeder and Broiler Grower, Broiler World, Georgia Poultry Times, Broiler Journal.

Again, test upon test demonstrates that broiler rations with 2½% to 3% dried whey far outstrip non-whey feeds in profit performance.

A few cents worth of whey in a bag of broiler feed makes birds pack on more meat and substantially steps up profits.

This fact is shown again by eight recent college feeding trials.

In these experiments dried whey in well-fortified basal rations boosted income over feed cost by up to 8¢ per bird. Growth was speeded as much as 0.59 lb. per bird in 10-week growing periods.

Note in the first table at left how dried whey also improved feed conversion (from 3.14 to 2.87); jumped income over feed cost per 1,000 birds from $209.25 with basal alone to $285.11 with whey added to basal.

Even when the basal was further fortified with fish solubles and distillers dried solubles in other tests, DRIED WHEY stepped up profits as much as $20 per 1,000 broilers.

These impartial studies show again that whey makes a good ration better — at a cost low enough to add a good profit.

If you finance broilers or sell to broiler growers, that's a fact worth knowing. It means that dried whey, in many cases, can spell the difference between profit and loss on a given batch of broilers.

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What's New in Feeding

Putting Feed Research to Work

Supplementary Methionine For Turkey Diets

● W. F. Pepper and S. J. Slinger, Ontario Agricultural College, Guelph, Canada; Poultry Science, Vol. 34, No. 4, Page 957.

Experimental evidence exists indicating that diets for poults are improved with supplementary methionine. These experiments have dealt with the early grownig period, and no literature appears to be available on the effect of methionine in turkeys carried through to relatively mature weights. This reported experiment was designed to study the effect of methionine supplementation of the turkey diets from hatching through 24 weeks of age.

Eight groups of Broad Breasted Bronze poults were used in the experiment. Duplicate groups were fed the basal diets without supplemental methionine, or the same diets with 0.025% methionine from hatching through 8 and 8 through 24 weeks of age. Other groups received methionine during the first 8 weeks but not during the 8-24 week period while still others were fed the amino acid during only the 8-24 week period. All-mash diets were used during the first 8 weeks, and the birds were fed mash, oats, wheat and insoluble grit ad libitum for the 8-24 week period.

The addition of methionine to the all-mash starting diet which contained 28% protein and 0.43% methionine resulted in a significant increase in weight and an improvement in feed efficiency at 8 weeks of age. Groups receiving extra methionine during the starting period only, or during both the starting and growing periods, weighed more at 24 weeks of age than those fed the amino acid only during the 8-24 week period or not at all. The use of supplementary methionine during the starting period only was just as effective as feeding the amino acid through 24 weeks of age. The difference in weight due to methionine did not prove to be statistically significant at 24 weeks of age.

Groups fed methionine utilized total feed somewhat less efficiently during the 8-24 week period than the controls. This was due to the fact that the methionine-supplemented groups consumed less mash, less wheat and more oats than the non-supplemented groups. It was the opinion of the authors that growing turkeys exercise some judgment in adjusting their methionine intake when fed in the manner indicated.

The results indicate that the methionine requirements of the turkey is not greater than 1.48% of the protein for the 8-24 week period in the presence of ample cystine.

COMMENTS:

It is quite surprising that more attention was not given to the other amino acids supplied by the starting and growing rations in the above tests. In numerous other tests it has been found that turkeys will respond to lysine supplementation when fed a corn-soybean oil meal type ration adequately fortified with all known vitamins, minerals, known growth stimulants and unidentified factors. Since in the above Canadian tests wheat made up such a large portion of the growing ration (it actually supplied about ⅓ of the total crude protein) and wheat is generally considered to be quite deficient in lysine, it would seem that lysine rather than methionine may have been the first limiting amino acid. If this were true, one would not expect to obtain a beneficial response from methionine supplementation.

Soybean oil meal, which is generally considered to be low in methionine, supplied a larger portion of the crude protein in the starter than it did in the grower. Methionine would therefore more likely be the limiting amino acid in the starter than the grower. Consequently, this might explain why a response was obtained from supplemental methionine in the starter and not in the grower.

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availability of the amino acids, particularly lysine and methionine, in soybean oil meal is dependent on the amount of heat applied to the meal during processing. Assuming this to be true, one should be certain that the soybean oil meal has received optimum heat treatment if it is to be used as the principal source of protein in any feed where protein quality is so important as in poultry starting and growing feeds.

Generally, if the protein level of a turkey feed is low, some benefit can be obtained from methionine supplementation. The same is true if conventional levels of protein are used but the energy content of the ration is increased by using high energy, low fiber ingredients or added animal fat. Even under these conditions, the amino acid content of the feeds should be calculated to determine if methionine is actually the first limiting amino acid before it is added to the feed. At the same time one can estimate the optimum level of supplemental methionine needed to balance the protein of the feed.

●

The Value of Animal Fat For Different Strains And Crosses of Broilers

● S. J. Slinger, J. D. McConachie and W. F. Pepper, Ontario Agricultural College, Guelph, Canada; Poultry Science, Vol. 34, No. 4, Page 780.

Stabilized fats are now being added to many broiler rations to increase their energy content. A short review of reported experiments in which dietary fat was studied revealed that its inclusion generally improved feed efficiency but did not always produce consistent growth responses. It was apparent that the nature of the fat and the composition of the diet were factors influencing the results. Little or no information was available concerning the effect of the strain or cross of birds used as a factor influencing the results to be expected from the use of tallow. This study was designed to give information along this line.

One hundred chicks from each of 10 different strains and crosses were fed practical broiler diets, and a like number received these same diets modified to contain 5% of stabilized animal fat.

Of the 10 strains studied, only two failed to show weight responses to the added fat. The two strains were Strain No. 2 Hampshires and White Cornish. Males showed a greater response than did females in all strains but the two just mentioned. Analysis of the variance of the weight date of the 10-week-old birds indicated highly significant effects due to strain, sex and diet.

Efficiency of feed utilization was enhanced in the case of every strain and cross by the inclusion of animal fat. The authors felt that the lack of weight response to added fat in the case of the two strains might be attributed to a need, by these strains, for diets higher in protein or other nutrients than were used in this study.

COMMENTS:

The starting diets were calculated to contain 23.6% protein and the finishing diets were calculated to contain 18.6% protein. These rations were high in energy, especially when fat was added; however, the ratio of protein to energy was not taken into account. Some poultry authorities have recommended 40-42 calories of energy per unit of protein in starting rations and 46-48 calories of energy per unit of protein in finishing rations. Calculations indicate that in the finishing ration the ratio was more than 50 to 1. This would establish the protein level of the rations as a limiting factor in this experiment.

In addition to maintaining the proper protein-energy ratio in the ration, the fortification of the other nutrients should increase proportionately to any energy increase. There is need for re-investigation of nutrient requirements in the presence of relatively high levels of dietary fat, because of the lack of consistency in results reported in the literature on the use of animal fat. This problem is complicated by the fact that strains and crosses, as indicated in this study, apparently differ in their nutrient requirements when fed rations containing animal fat.

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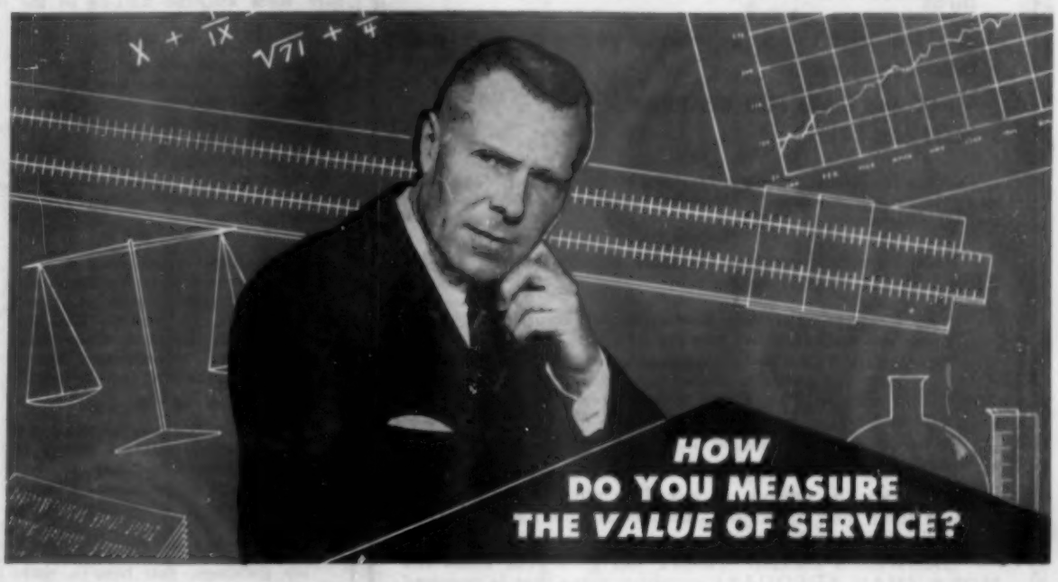

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as a source of certain unidentified factors, indispensable for optimum nutrition, in addition to its high quality protein, vitamin B complex and essential minerals.

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Sam: "She doan' say!"

◆ ◆ ◆

Each month has certain characteristics by which it can be recognized. March, for instance, is the month when the winds whistle through the bare trees and the holes in the streets.

◆ ◆ ◆

A woman took her small daughter to a movie and on the way, mother and child stopped at a department store. The daughter pointed to a radio, and said:

"I wish Daddy would buy one. Our television set has pictures, but this is nicer because all you have to do is listen."

◆ ◆ ◆

At a political convention, a sign had been erected near the speakers' platform for the benefit of press photographers. It read: "Do not photograph the speakers while they are addressing the audience. Shoot them as they approach the platform."

◆ ◆ ◆

A girl from the city watched for several minutes while a group of farmhands spread out hay to dry. Then, unable to suppress her curiosity, she asked politely: "Are they looking for a needle?"

◆ ◆ ◆

"My goodness, you have a marvelous cook!" gushed the guest. "She has taken the most exquisite pains with everything tonight. The food was delicious. I never could get a perfectly wonderful cook like that!"

"She's the one whom you discharged last week, dear," chuckled the hostess. "I just told her this morning you were coming to dine with me tonight."

◆ ◆ ◆

A young husband, arriving home from the office, found his wife in tears.

"I have had a terrible day," she told him. "Baby cut his first tooth and a little while later he took his first step and fell and knocked out his tooth."

"Then what?" asked the husband.

"Oh, darling," she said in a shocked voice, "he said his first word."

◆ ◆ ◆

Probably the most powerful head of steam ever created is that of young people trying to set on fire a world that is all wet.

◆ ◆ ◆

Horrible thought — maybe present generation will some day look back on these as the good old days!

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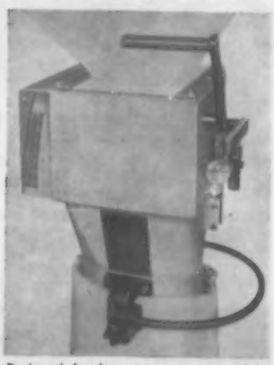

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If you know any dealer who's in the same predicament as the fellow above, or if you would like to boost your own feed sales, why not get all the details. Like other alert feed dealers, once you learn the facts we're sure you'll agree, "It's Time To Change To Staley's!"

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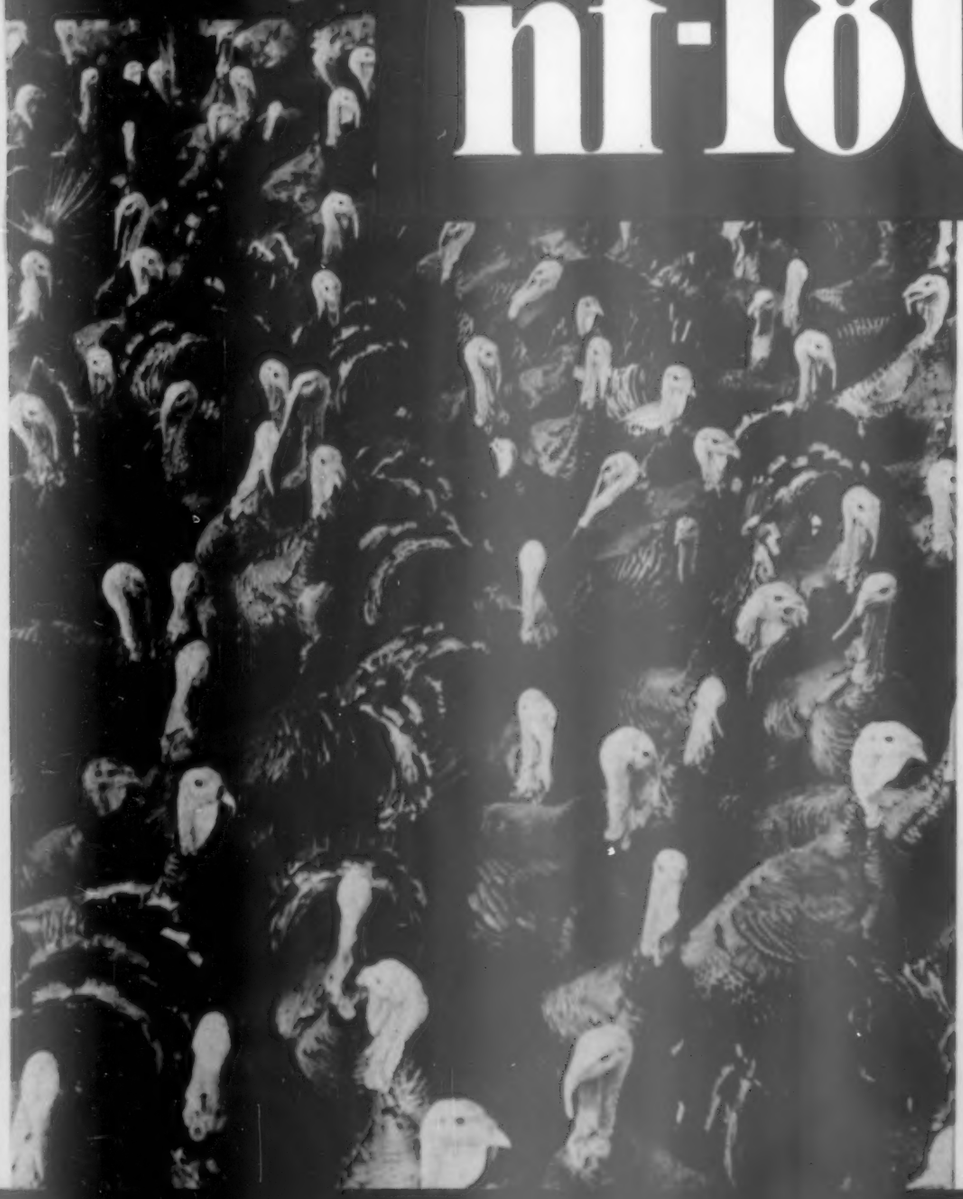

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- **BLACKHEAD**
- **HEXAMITIASIS**
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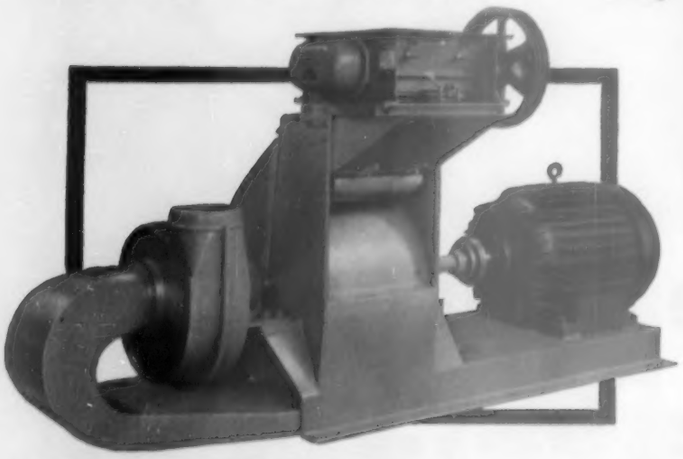

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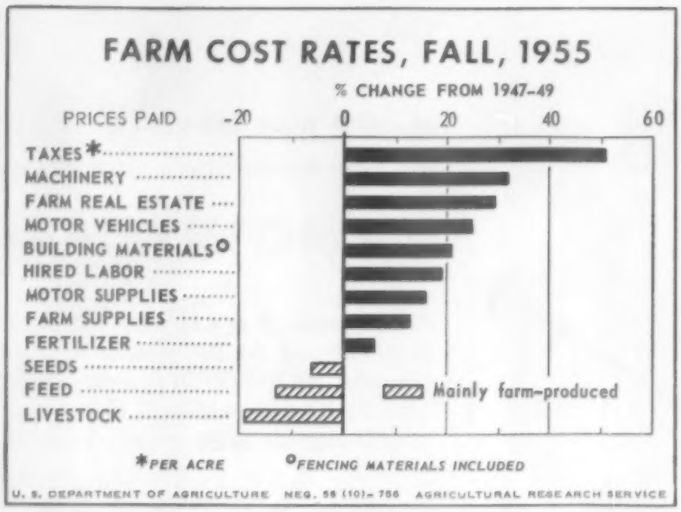

FEED COSTS DOWN—During the past six-eight years, only the costs of livestock have decreased more percentagewise than the costs of feed, as shown by this graph, prepared by the USDA Agricultural Research Service. The comparison is made between the 1947-49 average and the fall, 1955, costs. The lower price level of feeds has helped prevent a much more severe farm economy squeeze than exists today. Only seed, feed and livestock costs have decreased in price during the period of comparison.

Production of Sheep Moving from Range To Farm Flocks

WASHINGTON—Sheep production is gradually moving from range to farm flocks and from west to east, the U.S. Department of Agriculture pointed out recently.

For example, compared with the 1950 low in numbers, stock sheep inventories by regions in January, 1955, were up 18% in the north Atlantic states, 19% in the east north central region, 26% in the west north central area and 13% in the south Atlantic states. Numbers had increased only 3% in the mountain and Pacific states and were down 14% in the south central region.

Consistent with this trend, the lamb crop of 1955 increased 3% from 1954 in the native (eastern) sheep states but decreased 3% in the western sheep states.

These comments on the shift in sheep production were part of recent USDA remarks on the sheep and lamb outlook.

Looking ahead to 1956, USDA said it appeared there would be some decrease in sheep and lamb inventories next January. If numbers are down, it will be the fourth decrease since 1952, when numbers recovered to a temporary peak.

However, annual slaughter has been maintained in recent years in part by a slow net reduction in inventories. A rising lamb crop percentage has helped, too, with more lambs saved per 100 ewes.

"SERVING THE FEED INDUSTRY SINCE 1905"

Theo W. Martin & Son

Brokers Phone: Atwood 3811, 1401 Peachtree Bldg., Atlanta, Ga. Jobbers

Instead of trying to protect vitamin E that may be lacking in the first place, it's sounder economics just to add some

Myvamix

Vitamin E

FEED SUPPLEMENT

•

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Distillation Products Industries

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PERCY KENT BAG COMPANY, INC.

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Feed Mixers Products

COLBY

PULVERIZED

Oats or Barley

ROLLED OATS AND FEEDING OATMEAL

COLBY MILLING, INC.

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THESE OPPORTUNITIES* are knocking at the door of your feed business

This is a time of decision for many feed dealers. Possibly it is for you. A drastic change or two can make all the difference—in efficiency of your business, in bigger tonnage, in profit.

A few sharp new "working tools" may well give your feed business the keen competitive edge you are looking for. This is the time to explore what has been newly developed in these vital fields:

* **A newly recharged line of your own feeds.**

With Swift's new Pow-R-Pac base formulas and sound formulation counsel, your feeds can take a quality step to top position in your area. A program can be tailored exactly to your mixing needs and your price competition. If interested, check here — ☐

* **Top-quality selling advantages in nationally known feeds.**

Farmers and feeders pay attention when you talk, and advertise, "You get the Pick of the Proteins—from Swift." Tie up with a name farmers know—Swift—and you're on your way—up. You can review the full story by checking here — ☐

* **A Complete line of specialty feeds with real acceptance.**

Swift's full line of specialty feeds are brightly packaged, loaded with merchandising appeal as well as superior nutrition. Consider the possibilities of one quality line including three calf foods, a milk replacer for pigs, a sweet starter pellet for pigs, a booster feed for poultry and a complete line of seven popular-priced minerals. Why not find out how these can augment your present lines? Check here — ☐

* **Mill arrangement with new shortcuts.**

Have you wondered where to start in taking some of the cost and labor out of your present feed mixing and handling? Swift can help you with the new mill planning consultant service. You'll make a good start by checking here — ☐

* **Feed financing programs—realistic and effective.**

Swift can help equip you with the new tools to go after the big customers, the good ones you've always wanted. Now you can start even, or better, with any competitor. Why not investigate? Check here — ☐

* **Marketing assistance.**

Contact us for possible marketing assistance on the livestock or poultry that your customers feed. ☐

* **New, streamlined advertising and merchandising program to round up new customers.**

"Everyone has a promotion program" . . . but is it as thorough and well-planned as Swift's? Does it include training for sales personnel as well as expert assistance for producer meetings? Judge for yourself—just check here — ☐

* **A protein lift for your feeds.**

When you mix Swift's Animal Proteins into your feeds, you gain a quality advantage. Swift's proteins are entirely packing house products, thoroughly processed. If interested, check here — ☐

Check the opportunities above that you'd like to investigate—now. Then fill in the coupon below, tear out this entire page and mail it to the Swift's Feed Department Office nearest you, listed below. Your inquiry will be carefully and promptly handled in strict confidence. You will be contacted for a meeting appointment at your convenience.

SWIFT & Company Feed Department

Attention: Manager, Personal

I'd like to have you outline to me in person the opportunities I've checked above. This means no obligation on my part.

*Name*_____

*Firm*_____

*Address*_____ *State*_____

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Phone: Emerson 2571

Feed Mill
P.O. Box 482
Brownwood, Texas
Phone: Local 9484 and 3514

Plant Feed Department
Union Stock Yards
Chicago, Illinois
Phone: Yards 7-4200

P.O. Box 5548
Cleveland, Ohio
Phone: Melrose 1-2660

Feed Department
Union Stock Yards
Denver, Colorado
Phone: Tabor 5-1231

Box 38—Highland Park Station
Des Moines, Iowa
Phone 6-5175-6-7

Feed Department
4060 E. 26th St.
Los Angeles, Calif.
Phone: Angelus 7211

761 Dutro Place
Memphis, Tennessee
Phone: 36-1573

P.O. Box 38
North Portland, Oregon
Phone: Butler 9-8861

390 W. 24th St.
Ogden, Utah
Phone: 4-3413

P.O. Box 311
So. San Francisco, Calif.
Phone: June 8-3233

Swift's Feeds

Swift CENTENNIAL 1855 1955
TO SERVE YOUR FARM AND FAMILY BETTER

Feed Service Bulletin Board

Helpful Notes on Feeding and Management for Feed Men and Their Customers

Egg Cleanliness

If the time spent cleaning eggs were devoted instead to litter management, pen reorganization and ventilation planning and adjustment, the number of dirty eggs could be reduced and consequently their quality would be improved, say R. K. Lanson, assistant poultry husbandman, and H. D. Bartlett, associate agricultural engineer at the University of Maine Agricultural Experiment Station.

Results of a year's research on poultry house ventilation and the control of the moisture content in the litter were reported recently by the Maine specialists. Pens with gravity ventilation and with fan ventilation were used. Each forced draft ventilated pen was equipped with a thermostatically controlled fan which was set to operate at room temperatures above 40 to 45°.

The pens which received supplemental heat were warmer, dryer and had somewhat cleaner eggs than any of the other pens. The percentage of litter moisture in the heated pens dropped to 24% compared with 31% in the forced draft and gravity ventilated pens, and 38% in the control pen.

The Maine specialists found that there were several practices which improved litter texture by increased aeration of the litter thus keeping down the percentage of moisture. Among these practices was the plan of keeping a deep litter averaging 8 in. in depth. The deep litter was started early in the fall and broken up well to give a good texture and an abundance of surface for water absorption and evaporation by the time cold weather arrived. All litter was stirred weekly and hydrated lime was added at frequent intervals at the rate of one pound per bird.

Several handfuls of wheat were added daily into the litter causing the birds to stir the litter. One third of all the hoppers were placed on the roost so that birds would spend more time there, and thereby fewer droppings were voided into the litter.

Another contribution to good litter management, say the Maine men, was to move the waterers from the floor to a position over the roosts which considerably lessened the amount of moisture since water was no longer spilled into the litter.

The scientists concluded that the combination of gravity ventilation plus supplemental heat reduced litter moisture and produced cleaner eggs. The labor requirement to ventilate pens with supplemental heat was 10 minutes per day in contrast to four minutes daily required for the forced draft ventilated pens, and with the 12 minutes a day required for the restricted gravity ventilated pens, they said.

The direct relation of litter moisture to egg cleanliness is indicated, they point out, by the record that 25 to 30% litter moisture produced eggs that were rated at 76% clean; 30 to 35% moisture gave 69% clean eggs; 35 to 40% litter moisture allowed 64% clean eggs, and litter moisture above 40% allowed only 55% clean eggs.

◆

Hogs Can Eat Profit

An easy way to lose money in the hog business is to watch the market instead of the hogs. That's the conclusion marketing specialists in the Department of Agriculture & Immigration of Virginia arrived at from studying records of purchases on the Richmond, Va., market by one packer who grades all the hogs he buys.

The figures show a breakdown by grade of purchases from 174 producers over a three-month period. All hogs between 180 and 240 lb. were graded and bought by grade.

Out of the lot, 78% graded U.S. choice No. 1, 21% U.S. choice No. 2 and 1% U.S. choice No. 3, with a price differential of about 50¢ cwt. between grades.

Separating the hogs by weight shows still another picture, the Virginia specialists point out. The vast majority of the U.S. choice No. 1 hogs weighed between 180 and 220 lb. Most of the No. 2 hogs weighed 210 to 235 lb. and almost all the No. 3 hogs weighed over 220 lb.

What happened, say the marketing experts, is that a lot of farmers got their hogs ready and then spent a week or two, maybe longer, watching the market. All the time, those hogs were eating and putting on more weight. The result in many cases was that the hog ate the farmer out of 50¢ cwt. while he was waiting for a 25¢ rise in the market.

In the long run, conclude the specialists, the law of averages will pay

Cecil Yeargan, left, co-owner and manager of Planters Supply Company, looks over promotional material with Jimmy Whittle, RED HAT Sales Representative. Mr. Yeargan, like all RED HAT dealers, enjoys the full cooperation of the RED HAT sales organization.

"The results they get from RED HAT make our customers our best salesmen," reports Cecil Yeargan, manager of the Planters Supply Company, Opelika, Alabama. Planters Supply, owned by Mr. Yeargan and Mell Whatley, has been a RED HAT Feeds dealer since July 1954. The firm handles a full line of seeds, fertilizer, insecticides and farm supplies in addition to RED HAT Feeds.

An interior view of the Planters Supply Company shows the orderly, well-kept appearance of the merchandise displays.

Impressive Increase in Feed Volume Results in Just Six Weeks with RED HAT

RED HAT's top quality paid quick dividends to Planters Supply! During the first six weeks after taking over the RED HAT dealership, the firm had equalled its previous six months volume with another feed. A sound sales and promotion program, built around satisfied RED HAT customers, is responsible for this impressive growth, Mr. Yeargan says.

Feed Routes, Customer Service, Merchandising and Advertising Contribute To Growth

The Planters Supply manager points to feed routes and personal service offered customers in setting up and operating feeding and management programs as being important, too! Increased sales have also resulted from feed displays, live displays, open houses and "Free Chick" Days, he says. And backing it all up has been RED HAT's extensive advertising program — including a local radio show, farm magazine and newspaper advertising, and outdoor boards.

For complete information about RED HAT dealerships available in your area, write, wire or phone: Alabama Flour Mills, Decatur, Ala.

Mr. Yeargan, left, reviews poultry records with customer B. L. King, who reports outstanding results from RED HAT.

RED HAT FEEDS

ALABAMA FLOUR MILLS, Decatur, Alabama

Step-Up Poultry Grit SALES and PROFITS

WITH OUR *NEW* SELF FEEDING POULTRY GRIT UNITS

GRAN-I-GRIT

THE GRIT WITH THE SHARPEST GRINDING EDGES EVER CUT!

NORTH CAROLINA GRANITE CORP.

MOUNT AIRY NORTH CAROLINA

Over 100 years experience in making better bags for the milling industry 1847

COTTON • BURLAP • MULTIWALL PAPER • FAMILY SIZE FLOUR BAGS

CHASE BAG COMPANY

General Sales Offices: 300 W. Jackson Blvd., Chicago 6, Ill.

20 BRANCHES AND SALES OFFICES STRATEGICALLY LOCATED

off for the farmer who starts off with a good, meat-type hog, finishes him at 180 to 220 lb., and then sells him.

◆

High Production Cows Best

High-producing cows are the only ones dairymen can afford to own. That's what a study of 260 Holstein herds on test in dairy herd improvement associations shows, according to Leo R. Fryman, extension dairy specialist at the University of Illinois College of Agriculture.

Herds having the highest average milk production produced the most milk per pound of feed. Herds with an average of 13,290 lb. of milk per year produced 3.8 lb. of milk for each pound of grain fed. They also produced 2.6 lb. of milk for each pound of hay equivalent fed.

On the other hand, Mr. Fryman says, herds with an average production of 7,880 lb. produced only 3 lb. of milk for each pound of grain fed and 1.6 lb. of milk for each pound of hay equivalent fed.

Although the total amount of feed fed and the cost of feed per cow rose as production increased, the returns over feed cost increased much more rapidly than these costs. Cows producing 13,290 lb. of milk made $205 over feed costs, or about 2⅓ times more than herds producing 7,880 lb.

◆

Artificial Turkey Breeding

Because low fertility in turkey flocks is so costly and so common, University of West Virginia turkey husbandmen have been working with artificial breeding as a supplement to natural mating in a Broad Breasted Bronze flock. Artificial insemination is being used in pedigree matings with tom-to-hen ratios of 1 to 12. Of the 12 birds in each pen, six were permitted with the tom at all times and allowed to mate naturally. The other six were inseminated artificially at the beginning of the hatching season, and again every two weeks thereafter.

Even though fertility in the birds that mated naturally did not drop very low, the hens that were inseminated artificially maintained higher fertility. There was a big difference near the end of the hatching season. In the June hatch, the eggs of the hens inseminated artificially were 90% fertile, while those of the naturally mated hens were only 78% fertile.

The poultry husbandmen are quick to point out that artificial insemination is not a cure-all for low fertility problems. They found that breeding results were improved when the birds were provided with proper pre-season lighting, the toms were mature, and the tom-to-hen ratio did not exceed 10 birds to 1 tom.

Management factors are important, they say, and should be closely examined in flocks where low fertility exists. But artificial insemination may help, and the process is not tedious to learn. A little practice after watching a skilled operator will train an inseminator.

Although some breeders say that artificial breeding is too costly, and too tedious to use on turkeys, it certainly is no more costly than low fertility, the poultry specialists point out.

ELEVATOR FIRM SOLD

WAMEGO, KANSAS—The Wamego Seed & Elevator Co., which has been owned and operated by John O. Ross since 1948, has been sold to the Peddicord brothers who are ranchers, farmers and alfalfa dehydrator operators near Belvue, Kansas, six miles east of Wamego. Robert L. Peddicord, one of the brothers, will manage the Wamego Seed & Elevator Co. The same name will be retained. The other brothers are Leo, Tom and Ellis Peddicord. The manager was with International Harvester in New York for eight years, and has been manager of the dehydrator plant at Belvue for a year.

! ! ! NOW — 43% PROTEIN GUARANTEED ! ! !

EXPELLER SOYBEAN OIL MEAL

and **PEASIZE CAKE**

As Basic High-Protein Ingredient for

DOG FOOD RATIONS

RECOGNIZED By Dog Food Manufacturers from Coast to Coast

Because it is

PREFERRED for its high fat content and uniformity in size and texture.

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AVAILABLE throughout the entire year from our centrally located plant.

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* TO REVITALIZE YOUR FEEDERS & DEALERS
* TO CUT MILLING COSTS
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National plus Local Advertising cuts Sales resistance by 50%.

WRITE OR WIRE R. H. Shanaman

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ELIMINATE GUESSWORK IN MOLASSES MIXING!

Complete accuracy in Molasses mixing bag after bag! One mixer For All Your Mixing Needs. Mixes Both Dry and Molasses Feed.

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MINNEAPOLIS, MINNESOTA

U.S. Seeks Ways to Use Fish in Pet Food

WASHINGTON—An extensive survey has been launched in the Midwest by the Fish & Wildlife Service of the U.S. Department of Interior to develop markets for presently under-utilized fish as food for pets and commercially-reared fur animals. The work is being conducted as part of the Saltonstall-Kennedy program of developing new markets for fishery products.

Animal food associations and some pet food canneries are investigating the possibilities of using carp, sheepshead, smelt and similar species in pet food, according to Douglas McKay, secretary of interior. The fresh markets for these fish, he points out, are limited and what could be a valuable resource is not being used.

Mr. McKay notes that the animal food industry has been growing rapidly on the East, West and Gulf seaboards. Last year total output was estimated to be worth $19 million, as compared with $4 million in 1947.

Fur ranchers too are investigating the possible use of under-utilized fish as a substitute for the gradually declining supply of horse meat, which has been the basic fur animal food.

The government study is centering on the shores of Lake Erie, Mr. McKay says.

We have . . .
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The Robert E. McCully Company
525 East Armour Blvd. Kansas City 9, Missouri
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Paul E. Weber New Pfizer Sales Head

NEW YORK—Chas. Pfizer & Co., Inc., has announced the appointment of Paul E. Weber as sales manager of the company's chemical sales division. He succeeds Frank F. Black, who has resigned from this position and who is severing his connection with the firm as of the end of the year.

Mr. Weber, a University of Iowa graduate with a B.S. in chemical engineering, has been with the company since 1938 when he served as a field sales representative. After serving in the Navy in World War II, Mr. Weber returned to Pfizer in 1946, representing the company in the east, mid-West and South.

In 1948 Mr. Weber was named western regional manager. He was appointed national field sales manager in 1953, and assistant sales manager at the Brooklyn, N.Y. headquarters the following year.

Dr. Howard E. Moorman

JOINS DR. LeGEAR STAFF — Dr. Howard E. Moorman has been added to the technical staff of the Dr. LeGear Medicine Company, St. Louis; as director of new product developments. For the past seven years Dr. Moorman has been employed as a research and supervisory bacteriologist in the U.S. bacteriological warfare program. He has his bachelor's degree from Southern Illinois University, and his M.S. and Ph.D. degrees from the University of Illinois. He received his doctorate in 1949 in the field of bacteriology.

St. Regis Opens Sales Office at Little Rock

NEW YORK—St. Regis Paper Co. announces the opening of a multiwall packaging division sales office in Little Rock, Ark. Bruce C. Kelly, previously sales representative and office manager in Birmingham, will head the new office, located at 38 Barbara Drive.

Mr. Kelly will work under the direction of the multiwall packaging division's southwestern district office located in Dallas.

This division sells multiwall paper bags, bag making and bag filling equipment used to package rock products, manufactured feeds, chemicals, agricultural commodities and a number of other products.

20¢ QUARTERLY DIVIDEND

FORT WORTH, TEXAS—A quarterly dividend of 20¢ per common share payable Dec. 1 to stockholders of record Nov. 25 has been declared by the board of Fort Worth Steel & Machinery Co. This will make a total of 80¢ per share paid for the year.

FREE-FLOWING Monsanto phosphates resist bridging, mix evenly, won't settle out of feed.
QUALITY CONTROL keeps Monsanto phosphates at constant purity, simplifies formulating.

Four reasons why you should use MONSANTO DICALCIUM PHOSPHATE

HIGH PURITY—Monsanto phosphates are guaranteed less than .01% fluorine—the purest commercial grades obtainable. Every ounce you mix into your feeds is almost 100% available to the animal.

EASY HANDLING—Monsanto concentrates its technical and manufacturing skill on grinding phosphates so they flow freely and smoothly through feeders.

EVEN MIXING—Monsanto phosphates mix thoroughly and quickly. Once mixed, they "stay put" so the vital food supplement does not settle out of your feed mix during handling and storage.

SURE SUPPLY—Monsanto plants at Trenton, Mich., and St. Louis, Mo., make 18½% Regular and 21% High-Strength dicalcium phosphates in 100-lb. bags, hopper car and bulk boxcar lots. Twin supply sources assure you of speedy delivery of any size order at low shipping cost to any location.

PHONE NOW your local Monsanto office, or write: MONSANTO CHEMICAL COMPANY, Inorganic Chemicals Division, 710 N. Twelfth Blvd., St. Louis 1, Missouri.

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CHEMICALS – PLASTICS
SERVING INDUSTRY . . . WHICH SERVES MANKIND

INCREASE Your "Per Bag" Profit!
$ YOUR BRAND $

Mix Your Own Feed Brand with
BROWER Whirlwind FEED MIXER
Many feed dealers earn up to $1.50 profit per bag by mixing their own brand of feeds with the BROWER MIXER. The extra profits soon pays for the mixer. The "Whirlwind" mixes perfect blend in about 10 minutes — gives years of trouble-free service. Above and below-floor models. 8 sizes for mixing 700 to 4000 lbs. per batch. Write for details and prices.
BROWER MFG. CO. 404 N. Third St. Quincy, Illinois
Worlds Largest Selling Mixer!

KAFIR & MILO
Largest Dealers in Southwest
MID-CONTINENT GRAIN CO.
Kansas City, Mo.

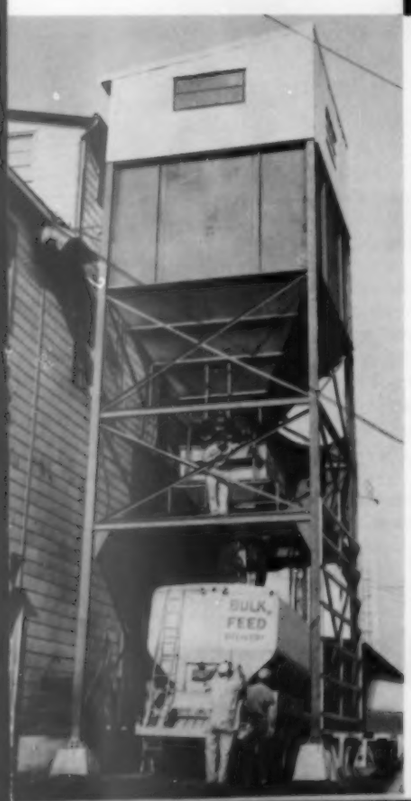
GO "BULK" VIA

SPROUT-WALDRON

...for faster, easier, more economical customer service

PIPED-IN-FEEDS*

win and hold customers



Typical bulk truck loading installation utilizing a hopper scale.

Like the swing to "balanced ration feeds," piped-in-feeds are coming in fast and coming to stay. Today in many sections of the country, more feed is delivered in bulk than in bags. Last year—in one state—more than 55% of the feed was delivered in bulk.

Large dairy and poultry feeders—among the best, most profitable customers—are demanding this new bulk service and are trading with millers who provide it. For the feeder, bulk deliveries eliminate back-breaking labor, losses to vermin, and waste due to feed being left in bags. Space is saved in feed rooms. Fewer hired hands are required. Bins can be located at the convenience of the feeder. Deliveries are dustless and there is no nutritional change in the feed. For convenience, no other method can match pneumatic piped-in-feed deliveries.

To meet the urgent demands of customers and prospects, millers throughout the country have installed or are planning to install bulk delivery services. Those who have gone "bulk" via the Sprout-Waldron Pneumatic *Feed Piper** Bulk Truck are receiving many dividends. They're increasing sales volumes and reducing the costs of bagging, handling, and warehousing sacked feeds. And they're getting more bigger-volume customers and securing old customers against competition.

When you are faced with the "bulk" problem, you'll find that your Sprout-Waldron Man has your *one best* answer. Sprout-Waldron offers the most advanced pneumatic bulk trucks . . . the *only* nation-wide, on-the-spot counseling and servicing facilities . . . and *all* necessary auxiliary equipment for a complete bulk feed delivery system, including guidance on bin installations for your customers. Go "bulk" via Sprout-Waldron to make the most of this modern trend.

**FEED PIPER, PIPED-IN-FEEDS are trademarks of Sprout-Waldron*

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BULLETIN 156

GO

"BULK"

VIA

SPROUT-WALDRON

SPROUT-WALDRON

FEED PIPER

...your only source for a co
bulk trucks...en
and on-the-

Feed Piper with
Self-Loading Device*

The *Original* Pneumatic Bulk Truck

Pipes feeds by air to any bin... fast

FEED PIPER was the first pneumatic bulk truck in action... and continues to be first in performance. It unloads by air through a flexible steel hose that has almost unlimited "reach" and "lift." There are no booms to place... no augers to cause trouble. You can fill the most out-of-the-way bins easily and quickly. Obstructions or soft ground around barns can be avoided by extending hose over those areas. When permanent piping is installed to farm bins, feed is delivered as easily and as dustless as fuel oil.

The Sprout-Waldron Feed Piper handles mashes... pellets ... and flaked, rolled, or whole grains, with or without molasses. Multiple compartments permit different feeds to be carried in the same load without intermixing. Contamination between loads is eliminated.

The truck engine serves as the one and only source of power required to pipe feeds into bins. No auxiliary equipment on the truck is necessary. Truck chassis can be selected by the purchaser and obtained from his own dealer. The body and all mechanism is built and mounted on the chassis at the Sprout-Waldron Bulk Truck Plant. Models are available with capacities from 385 to 1350 cu. ft. Normally, capacities over 678 cu. ft. come in semi-trailer units.

Piping feed to
typical bin installations

TWO-WAY PAYLOADS—A SELF-LOADING DEVICE* is optional equipment with the Feed Piper. It consists basically of a cyclone-type collector mounted over the rotary vane feeder plus other equipment. With this attachment, grain or feedstuffs can be drawn from the bins of feeders, securing payloads for return trips. It can unload feed or grain from railroad cars, and, if desired, blow the load into other trucks. Many other adaptations are possible with the Self-Loader.

Only SPROUT-W
nation-wide fa

Sprout-Waldron can follow thro
sale because of a nation-wide fo
and because all transactions are
dlemen. You receive personal,
nance instructions. You also get
major repairs due to accidents,
Behind every Feed Piper is Sp
workmanship and materials plus

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BULK TRUC

The Best in Milling Equipment Since 1866

...mplete line of pneumatic ...tire bulk systems... ...spot services

The Standard Feed Piper

BIG SAVINGS IN OPERATING COSTS—Speedy Feed Piper Service permits more deliveries per day . . . makes deliveries easier, more profitable. Set-up time is reduced to seconds, with no maneuvering. Only one truck operator is needed, and help from the customer is unnecessary.

In actual usage, a single Feed Piper is hauling up to 200 tons a week—40 tons per day—with only one operator. Delivering sacked feed, three trucks with three operators each are usually required to move such tonnage. Think of the savings in operating costs. Think of the manpower that can be applied to more productive work. Think of the good will that you can build with Feed Piper Service. Then go "bulk" via Sprout-Waldron.

FEED PIPER SEMI-TRAILER UNIT

In capacities over 678 cu. ft., Feed Piper generally is built as a semi-trailer unit. It operates identically to standard Feed Pipers except that source of blower power can be either from the tractor engine or from an internal gasoline engine built into the semi-trailer. Over-all lengths of units are from 22'6" to 34'6". Bodies are mounted on sturdy trailer chassis equipped, in most cases, with king-pin plate, king-pin, two-speed vertical landing gear, air brakes, 1020 tires and tubes, flaps and spacers, and all lights including direction lights. The semi-trailer unit comes complete and ready to operate.

*Patent applied for

...ALDRON provides ...actory service

...ugh properly on every Feed Piper ...rce of sales and service engineers, ...between factory and user—no mid-...n-the-spot operating and mainte-... proven source for spare parts. For ...vernight service is often provided. ...rout-Waldron's guarantee of good ...an unmatched service organization.

...WALDRON

...K DIVISION

...MUNCY, PENNSYLVANIA, U.S.A.

Compare FEED PIPER ADVANTAGES!

...— provides uniform flow without slugging . . . reduces stress per unit area.

...— longer wear.

...— located above running board . . . easier maintenance.

...— drives feeder and conveyor belt with less maintenance . . . has fewer wearing parts.

— seal compartments to provide flexibility in loads.

— spreads load over more belts, providing longer belt wear . . . less chance of failure.

— assure reliable delivery service . . . less downtime and maintenance.

— all contained on truck . . . only flexible hose is extended for unloading. All operating controls are at rear.

— much trouble is avoided.

— originated, designed, and manufactured by Sprout-Waldron's milling and pneumatic engineers—men thoroughly experienced in the problems of moving feed by air.

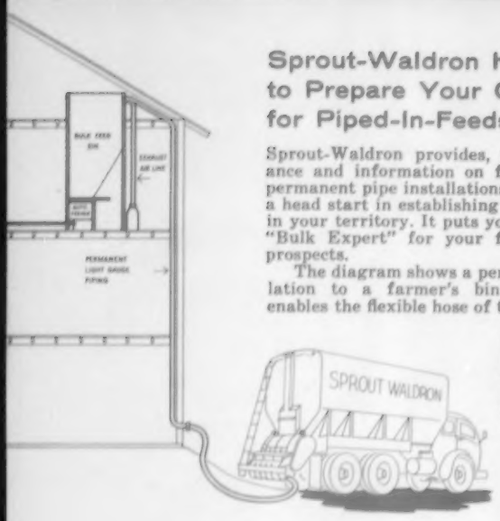
— compact design, quality finish add sales appeal to bulk delivery service.

FEED PIPER PNEUMATIC UNLOADING SYSTEM

Converts van, stake, and dump body trucks and trailers to bulk unloading by air

Now small mills and large mills on a bag program to dealers can meet bulk competition at low cost with the Sprout-Waldron Feed Piper Unloading Unit. Sacked or loose feeds are simply dumped or pushed into a hopper placed in the floor of the truck, and the unloading unit pumps them into the farm bin by air pressure through flexible hosing. This provides all of the unloading advantages of the Feed Piper Bulk Truck.

DO-IT-YOURSELF KIT containing all major parts of the Feed Piper Unloading Unit is provided for assembly by the miller . . . or the unit may be installed on miller's existing bag delivery truck at the Bulk Truck Plant.



Sprout-Waldron Helps You to Prepare Your Customers for Piped-In-Feeds

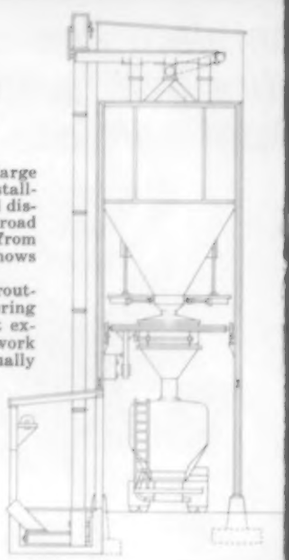
Sprout-Waldron provides, without cost, guidance and information on farm feed bins and permanent pipe installations. This can give you a head start in establishing Feed Piper Service in your territory. It puts you in the position of "Bulk Expert" for your feed customers and prospects.

The diagram shows a permanent pipe installation to a farmer's bin. This installation enables the flexible hose of the Feed Piper to be connected to the permanent pipe. Dusting is eliminated. Deliveries are faster. The feed is delivered as easily as fuel oil.

Bulk Receiving Stations

Many feed millers with large territories to cover are installing bulk feed receiving and distribution centers at railroad sidings in locations remote from their mills. The diagram shows a typical installation.

For such stations, Sprout-Waldron provides engineering services and all equipment except minor sheet metal work and the bins, which are usually fabricated locally.



FREE MERCHANDISING AIDS to help you promote "BULK" to your customers

FARM BIN BOOKLET

A 16-page booklet, fully illustrated, sells your Feed Piper Service to your customers and prospects. Tells them how to install bulk bins and how to prepare for pneumatic bulk deliveries. A quantity of the booklets is provided to all purchasers of the Feed Piper. Space for imprinting your name is provided on each booklet.

MAT SERVICE

Mats of a newspaper ad and for publicity promotions are available. These, along with copy suggestions, help you to make up professional promotional materials of all kinds—ads, posters, banners, circulars, publicity, etc.

SPROUT-WALDRON
BULK TRUCK DIVISION
The Best in Milling Equipment Since 1866
MUNCY, PENNSYLVANIA, U.S.A.
Exclusive Canadian Distributors: ***Strong-Scott, Limited, Winnipeg***
PELLET MILLS • HAMMER, ROLLER, ATTRITION AND BURR STONE MILLS
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"BULK"
SPROUT-WALDRON

fill out and mail coupon now for full details!

Printed in U.S.A.

Season's Greetings

Pfizer

Wishing you, too,
The Best of Health
throughout the
New Year

AT THE MIDWEST PRODUCTION SCHOOL—Some of the men who spoke or presided at the recent Midwest Feed Production School in Kansas City are shown in these pictures. In the first picture is Richard S. Sheehy, The Quaker Oats Co., Chicago, as he spoke on materials handling. The second photo shows, left to right, Oscar Straube, Pay Way Feed Mills, Kansas City; Maurice Wells, Waterloo (Iowa) Mills, Inc., and Walter Stohrer, Allied Mills, Inc., Peoria, Ill. In the third picture are (seated) Charles F. Barr, Ames (Iowa) Reliable Products Co.; John Helmovics, J. B. Ehrsam & Sons Mfg. Co., Enterprise, Kansas; James H. Burrell, James H. Burrell & Sons, St. Louis; (standing) Lloyd Larson, Midwest Feed Manufacturers Assn., and Jerry Karstens, Feed Age, Chicago. Talking over program details in the fourth picture are Phil C. Murray, Pillsbury Mills, Inc., Clinton, Iowa, and Forrest Lipscomb, Jr., Lipscomb Grain & Seed Co., Springfield, Mo.

SEASON'S GREETINGS
A joyous Christmas to you and yours... and may the seasons ahead bless your home and business and spread happiness throughout this great land of

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1944 WEST 96TH STREET • CLEVELAND 2, OHIO
Subsidiary of Chesapeake Industries, Inc.

Feed Committee of GFDNA Completed

ST. LOUIS—E. B. Evans, president of the Grain & Feed Dealers National Assn. announces completion of the membership of the National Feed Committee. This committee principally represents the feed retailer and the smaller feed manufacturer.

Frank Heffelfinger II of King Midas Mills, Minneapolis, is the committee chairman. Other members are William A. Burrell of Jas. A. Burrell & Sons, Inc., St. Louis; Charles S. Force of Little Bros., Kalamazoo, Mich.; A. C. Koch of the Breese Grain Co., Breese, Ill.; James A. Olson of the Davenport Elevator Co., West Bend, Iowa; Richard Serkland of the Grain Products Co., St. James, Minn.; R. E. Wendland of the Wendland Grain Co., Temple, Texas; Kermit Wagner of Wagner Mills, Inc., Schuyler, Neb., and Leon McCorkle of the Waldo Supply Co., Waldo, Ohio.

This committee works closely with E. G. Cherbonnier of St. Louis, nationally known feed consultant and editor of Feed & Feeding Digest, a semi-monthly bulletin from the GFDNA.

Cincinnati Feed Club Has Christmas Party

CINCINNATI — With two professional entertainers setting the pace, about 40 members and guests of the Cincinnati Feed Club enjoyed a program of singing at an annual Christmas party Dec. 5 in Hotel Netherland Plaza.

Guests included Don Burres, Major Burres Seed Co., Wilkinson, Ind.; C. K. MacDougal, district sales manager, International Minerals & Chemical Corp., and Grover D. Cloyd, Provico Feeds, Cincinnati.

Chairman Robert Kemper, Early & Daniel Co., announced that the next dinner meeting will be held Feb. 6 at the Cincinnati Club.

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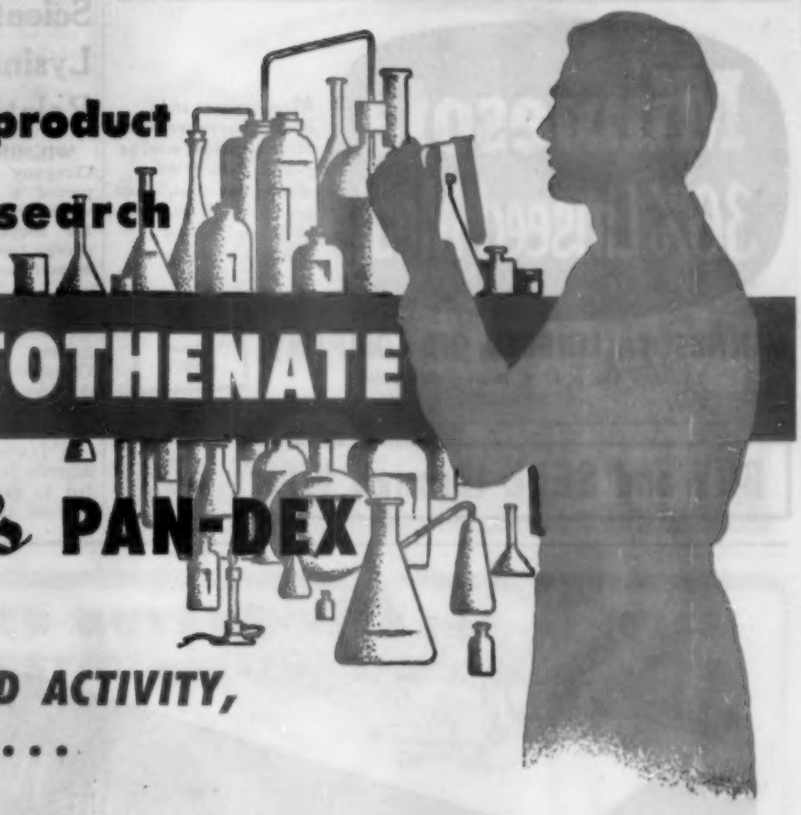

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of Dawe's basic research

CHOLINE PANTOTHENATE
in Dawe's PAN-DEX

MORE PANTOTHENIC ACID ACTIVITY, PLUS A CHOLINE BONUS... AT NO ADDED COST!

Here is more fortification for your pantothenic acid dollar. In each pound of DAWE'S PAN-DEX 32, you get the equivalent vitamin activity of 34 grams calcium pantothenate dextrorotatory, plus .4 pound of 25% choline chloride dry mix . . . a 10% greater value at current prices.

CHOLINE PANTOTHENATE, source of pantothenic acid and choline in DAWE'S PAN-DEX, is the first chemical linkage of these two important B-vitamins. It is an achievement of Dawe's basic research in product development and covered by U. S. patent No. 2,653,968.

CHOLINE PANTOTHENATE, dispersed in soybean oil meal and corn distillers' dried grains, is available to feed manufacturers under the trade name DAWE'S PAN-DEX in two standard potencies.

PAN-DEX 32—Each pound contains the vitamin activity of:
32,000 milligrams d. pantothenic acid, equivalent to 34,000 milligrams d. calcium pantothenate, and 45,000 milligrams choline chloride.

PAN-DEX 16—Each pound contains the vitamin activity of:
16,000 milligrams d. pantothenic acid, equivalent to 17,000 milligrams d. calcium pantothenate, and 22,500 milligrams choline chloride.

Also available in concentrated liquid form.

Use DAWE'S PAN-DEX to add more economically the increased levels of pantothenic acid recommended for today's feed efficiency. Shipments may be made from Dawe's plants in Chicago and Peoria, Illinois, and Auburn, Washington, or from conveniently located warehouse stocks across the country. Write for sample and quotations.

OTHER DAWE'S PRODUCTS FOR FEED FORTIFICATION

Choline Chloride—Dry and liquid (non-corrosive)
Riboflavin Supplements—Primary fermentations
B_{12} Supplements—Primary fermentations
B_{12}-Antibiotic Supplements—Widest selection
Procaine Penicillin—Most effective antibiotic for poultry
Bacitracin—All-purpose antibiotic
Niacin
Forbee—Standard combinations of Riboflavin, Pantothenic Acid, Niacin and Choline
Fixtdee—Mineral Stable dry D_3, 200,000 I.C. units per gram. In 16⅔ lb. tins for convenient batch premixing of lower potencies
Sterol D_2—Dry D_2 in soy or corn meal
Dry D_3—For four-legged animals
Fixtay—Mineral Stable dry A, exclusive patent
Vitamin K—Anti-hemorrhagic factor
R-Sonic 20x—Arsonic acid effective at low levels

Available singly in all standard potencies, or in combinations custom-blended to your specifications.

Dawe's Laboratories, Inc.
4800 S. Richmond St., Dept. FS-125 Chicago 32, Illinois

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Please send inspection sample and quotations on Dawe's Pan-Dex.

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Scientists Report Lysine-Energy Relationship

WILMINGTON, DEL.— Du Pont Company nutritionists recently reported a lysine-energy relationship which they said indicates that hogs fed supplemental lysine in high-energy feedlot rations may gain faster and more efficiently.

The report was made by Dr. Hans Rosenberg in a paper prepared for the recent meeting of the American Society of Animal Production in Chicago. The work with lysine was done by Dr. Rosenberg and Dr. Rudolph Culik at Du Pont's Stine Laboratory in Newark, Del.

A ration similar to the type ordinarily fed hogs in the feedlot was fed to rats. Increasing the calorie content and adding a pre-calculated amount of lysine made the rats gain faster on less feed per unit of gain, Dr. Rosenberg said.

Lysine, one of the amino acids, cannot be synthesized by the animal and must be supplied in the diet in sufficient amounts, the researchers noted. It is likely to be critical in diets based mainly on cereal grains. Many of the ingredients which go into hog feeds are low in lysine content, Dr. Rosenberg said, and hogs in feedlot operations may not obtain enough of the amino acid in their feeds.

He reported that there is a direct ratio between the calorie content of a feed and the amount of lysine required for best performance. This makes it possible to calculate the lysine requirement in rat diets for various calorie levels.

It is said to be the first time that an energy relationship has been reported for an amino acid other than methionine, and in any diet other than poultry rations. A methionine-energy relationship in broiler rations was reported by Du Pont scientists last spring.

The lysine experiments with rats paralleled those for methionine in poultry diets. A practical diet, complete in all nutrients including amino acids, was modified to change only the calorie content, Dr. Rosenberg explained. Each time the energy of the diet was increased, it was found that a corresponding increase in lysine was required. This proved true when the rats were fed an experimental diet based on bread crumbs and again when they were fed a practical type pig ration based on corn, cottonseed meal and wheat flour middlings.

Dow Chemical Opens New Buffalo Office

MIDLAND, MICH. — The Dow Chemical Co. has announced the opening of a sales office in downtown Buffalo at 70 Niagara St. to service a territory that covers a substantial part of New York state, extending east to and including Utica. It also will serve a 10-county section of northwest Pennsylvania.

Establishment of the new office, Dow's 16th located in major cities throughout the U.S., is in line with the company's over-all program to broaden sales activities for improved service to markets in growing industrial areas, Donald Williams, vice president and director of sales, said.

Manager of the office is Eugene L. Martinez, who was advanced to the post after nearly 10 years as general chemicals salesman with the company's office in New York City.

The sales staff includes two chemicals salesmen, Seward H. Mott, Jr., and Gerald L. Mitchell, and four plastics salesmen.

Agriculture Yearbook Announced by USDA

WASHINGTON—The U.S. Department of Agriculture has announced publication of its 1955 Yearbook. The 752-page volume is devoted to drought, floods and the normal sources and uses of water.

Entitled "Water," the book contains considerable information on all aspects of a subject that has become a major national concern. Its 95 chapters are written, mostly in nontechnical style, by 149 specialists in the USDA, state agricultural colleges and divisions, and private and federal organizations whose work pertains to water. The book has many drawings, maps, and photographs.

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Take advantage of this new method of worming—and the most extensive promotional program ever put behind a swine wormer. It features cadmium oxide feed—and offers licensees the promotional tools listed below.

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The manufacture, use and sale of grain-based swine feeds containing any cadmium compound are covered by U. S. Pat. No. 2,696,455. Licenses are available to formula feed manufacturers. No minimum requirements, no signing fees. Write for full details.

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✓ An informative 16-page booklet for swinemen ✓ Counter card
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PROVED ON-THE-FARM
VICTOR FEEDS

U.S. Fish Meal Output Under a Year Ago

WASHINGTON — September production of fish meal and scrap and condensed fish solubles in the U.S. was less than for the same month in 1954, but homogenized condensed fish production increased.

The report on fish meal and oil issued by the U.S. Department of the Interior shows that September production of fish meal and scrap by firms which normally account for about 90% of the total output amounted to 29,504 tons, compared with 33,225 tons for that month in 1954, or a decrease of 11%.

Condensed fish solubles production during September was down 19% to 19.6 million pounds from 24 million pounds during that month a year ago. Production of homogenized condensed fish during September totaled 4.1 million pounds, compared with 3.6 million pounds during September, 1954, a 15% increase.

For the nine months ending in September, meal and scrap production totaled 191,677 tons, compared with 195,183 tons in the same period a year earlier. Homogenized condensed fish production in that period this year totaled 37,484,000 lb. as against 45,212,000 the previous year. Production of condensed fish solubles in the nine months has also fallen off—from 140,632,625 lb. in 1954 to 138,426,870 lb. in 1955.

Imports of fish meal during August, 1955, amounted to 4,974 tons, compared with 7,917 tons which entered the U.S. during the same month in 1954. During the first eight months of this year, 67,817 tons of meal were imported, compared with 117,909 tons during the same period in 1954—a decrease of 42%.

Fermentation Book Issued by Pfizer

NEW YORK—A 32-page book on fermentation chemistry has been published by Chas. Pfizer & Co., Inc., Brooklyn. It is called "Our Smallest Servants."

The book is illustrated in color with prints, photographs, drawings and diagrams.

"Our Smallest Servants," according to a foreword by John E. McKeen, Pfizer president, "deals with one of the most momentous and far-reaching of all scientific achievements: The ability to harness microscopic living creatures in the service of mankind."

The book describes the progress of fermentation from its primitive stage as "art without science" to the contemporary period when selected mold organisms are controlled by the biochemical engineer for the production of antibiotics, hormones, vitamins and many valuable industrial and agricultural chemicals.

In one section the reader is shown photos of many of the fungi that have been put to work. Man's smallest servants contribute not only to his health, the book explains. They make materials essential to plant sprays and animal feeds, paints and plastics, industrial acids and salts, cosmetics and candy, rust removers and radiator renewers, beverages and blueprints.

For the reader's use, the book includes both a portrait gallery of the scientists who have contributed to the progress of fermentation chemistry and a bibliography.

NEW MILL GOING UP

SIOUX FALLS, S.D.—An expansion program at Zip Feed Mills is featuring the erection of a new concrete plant. The new building at its E. 8th St. site will measure 68 ft. by 60 ft. and will have a 30 ft. headhouse above the 170 ft. tall concrete shell. At present, Zip operates adjacent to the new mill in a horizontal-type plant.

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CONTROL LARGE ROUNDWORMS?

MY HOUSES ARE CLEAN AND I ROTATE MY RANGES. WHY DOES MY FLOCK HAVE WORMS?

BUILT-UP LITTER HARBORS WORMS, BUT GRANULATED MASH-NIC CONTROLS 'EM. ROTATING YOUR RANGE HELPS, BUT IT TAKES YEARS FOR THE WORMS TO DIE OUT. SEE WHY REGULAR WORMING IS SO IMPORTANT?

IS THE GRANULATED MASH-NIC BETTER THAN POWDER?

ACTUAL TESTS SHOW BIRDS WILL EAT 90% MORE OF THE GRANULAR STUFF. YOU WASTE LESS.

WHEN SHOULD I START TREATING MY YOUNG BIRDS?

CHICKENS AFTER THEY'RE FOUR WEEKS OLD. TURKEYS AFTER SIX WEEKS.

HOW MUCH MASH-NIC DO YOU RECOMMEND FOR A DOSE?

USE 2 POUNDS IN EACH 100 POUNDS OF MASH. START WITH THE MORNING FEED AND KEEP IT UP FOR 24 HOURS. IF YOUR RANGE OR HOUSE IS BADLY INFESTED, KEEP FEEDING THE MASH-NIC FOR 72 HOURS.

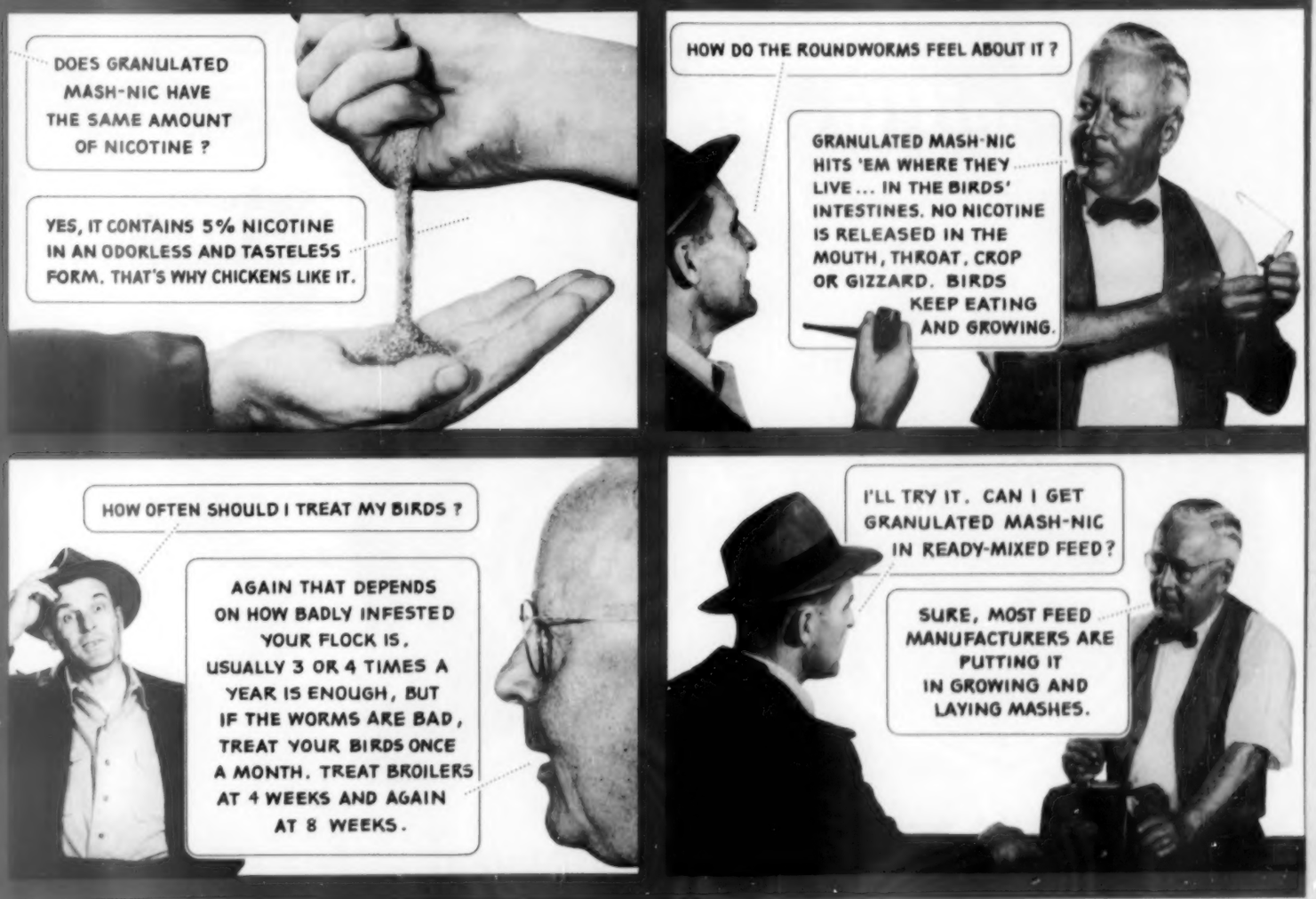
OR CAN I MIX IT MYSELF?

IF YOU WANT, I'VE GOT 50 POUND BAGS READY TO GO.

SOUNDS LIKE YOU'VE SOLD YOURSELF ON BLACK LEAF'S GRANULATED MASH-NIC.

DOGGONE RIGHT, AND I'M SELLING MY CUSTOMERS TOO!

? USE NEW GRANULATED *MASH-NIC!*


DOES GRANULATED MASH-NIC HAVE THE SAME AMOUNT OF NICOTINE ?
YES, IT CONTAINS 5% NICOTINE IN AN ODORLESS AND TASTELESS FORM. THAT'S WHY CHICKENS LIKE IT.
HOW DO THE ROUNDWORMS FEEL ABOUT IT ?
GRANULATED MASH-NIC HITS 'EM WHERE THEY LIVE ... IN THE BIRDS' INTESTINES. NO NICOTINE IS RELEASED IN THE MOUTH, THROAT, CROP OR GIZZARD. BIRDS KEEP EATING AND GROWING.
HOW OFTEN SHOULD I TREAT MY BIRDS ?
AGAIN THAT DEPENDS ON HOW BADLY INFESTED YOUR FLOCK IS. USUALLY 3 OR 4 TIMES A YEAR IS ENOUGH, BUT IF THE WORMS ARE BAD, TREAT YOUR BIRDS ONCE A MONTH. TREAT BROILERS AT 4 WEEKS AND AGAIN AT 8 WEEKS.
I'LL TRY IT. CAN I GET GRANULATED MASH-NIC IN READY-MIXED FEED?
SURE, MOST FEED MANUFACTURERS ARE PUTTING IT IN GROWING AND LAYING MASHES.

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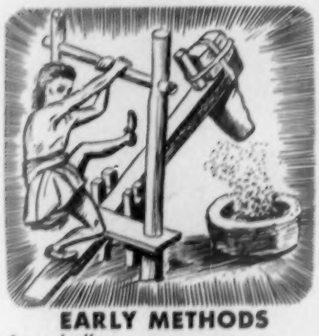
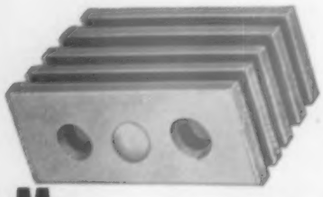


EARLY METHODS

for grinding grain were slow, arduous jobs, often powered by human energy. An ingenious device was this foot-driven pestle which pounded whole grains to bits in a stone mortar. The end result was crude and uneven with hull and chaff mashed in with the meal.



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Eli Lilly Purchases Farm for Expanded Agricultural Research

INDIANAPOLIS—Eli Lilly & Co. has announced the completion of negotiations to buy a 267-acre farm for agricultural research.

Lilly, which first entered the agricultural market a year ago with "Stilbosol" (diethylstilbestrol premix), said the purchase of the farm represents another move in the firm's expansion into the agricultural field.

The new farm adjoins a 150-acre tract on which the Lilly Biological Laboratories, Greenfield, Ind., are located. The combined acreage provides 417 acres on which the company can center its agricultural research activities and expand the varied research now being conducted.

Dr. O. K. Behrens, director of the biochemical research division of which agricultural research is a part, said the additional land and facilities will be used in a program through which it is expected that Lilly will add new products in the fields of plant and animal health and nutrition.

The company will take possession of the new research land March 1, and addition of buildings and facilities will start soon thereafter. Tentative plans call for a number of new research barns and lots for cattle, swine and sheep. Veterinary research facilities will be built next to the present biological laboratories. Greenhouses, to be used mainly for research in plant disease, control and growth, will also be erected. Present poultry research, now conducted at the biological laboratories, will be expanded in new quarters.

Dr. J. F. Downing is head of the agricultural research department. Among other Lilly agricultural scientists are Dr. Charles F. Chappel, in animal nutrition, and Dr. Frank O. Gossett, in veterinary medicine research.

Lilly agricultural research now includes studies in animal nutrition, veterinary medicine, plant pathology and physiology, and entomology and insecticides. These projects are now being carried on at the biological laboratories, a leased farm and by an independent research organization.

Ohio Bag Firm Now Owned by Albemarle

RICHMOND, VA.—Since Nov. 28, the Raymond Bag Co. of Middletown, Ohio, has been operating as a wholly owned subsidiary of the Albemarle Paper Manufacturing Co. of Richmond. Raymond will retain its identity and the present personnel will remain intact. The transaction was started early in November (Feedstuffs, Dec. 3, page 52).

The purpose of the change, according to W. F. Lawrence, Raymond board chairman, and C. L. Mers, president of Raymond, was to make Raymond a part of an integrated operation.

King Midas Awards Mixer Certificates

MINNEAPOLIS — Certificates for dealers who completed a custom mixing course were awarded by King Midas Feed Mills at a feed forum here Dec. 4-5. More than 50 feed dealers attended.

Instruction in the use of custom mixes for livestock and poultry was given. Leaders of general sessions included J. R. Lindell, sales manager; Myron Carpenter, nutritionist; Charles Wright, assistant sales manager; J. R. Adams, advertising manager; and F. T. Heffelfinger, II, general manager.

FORMER FEED MAN DIES

MILWAUKEE—Alvin W. Lepak, 47, operator of a feed and flour business at 5500 So. 27th St., Milwaukee, until a year ago, died recently. Surviving are his widow, four sisters and a brother.

Their sniffing spells sales!

Put G-AN-EN nose appeal to work in your dog food!

G-AN-EN starts with nose appeal . . . follows through with flavor!

Here's a supplement that really makes sales flourish. A G-AN-EN fortified ration really stimulates a dog's appetite . . . gives dog owners a real desire to buy *your product.* G-AN-EN aroma is downright irresistible. Dogs really go for it! G-AN-EN flavor is just what "Fido" ordered. He loves it!

G-AN-EN is economical to use . . . gives you more food value to sell!

G-AN-EN is concentrated! 5% is all that's needed in the mix. It's a blend of important nose and appetite appealing nutrients: Kraco dried whole whey, dried buttermilk, cheese rinds, brewers dried yeast, stability improved vitamin A and vitamin D_2 feeding oil, niacin, sulphates of iron, zinc, copper and manganese chloride. With this combination, you're set for good business.

Contains vitamins, proteins, minerals!

6 vitamins

G-AN-EN offers stability improved vitamins A and D_2 feeding oil, B_{12}, riboflavin, niacin (the anti-black-tongue factor), and pantothenic acid.

6 minerals

G-AN-EN offers the valuable milk minerals, calcium and phosphorus, plus the mineral salts, copper, iron, manganese and zinc.

Milk protein

G-AN-EN offers milk protein which contains all the essential amino acids.

Comes in handy, dry form . . . fits ANY mix formula!

You'll find G-AN-EN quick and easy to blend. It's packed in 50-lb. bags. Order G-AN-EN from Phenix Foods Company. A division of Kraft Foods Company. 460 E. Illinois St., Chicago 90, Illinois.

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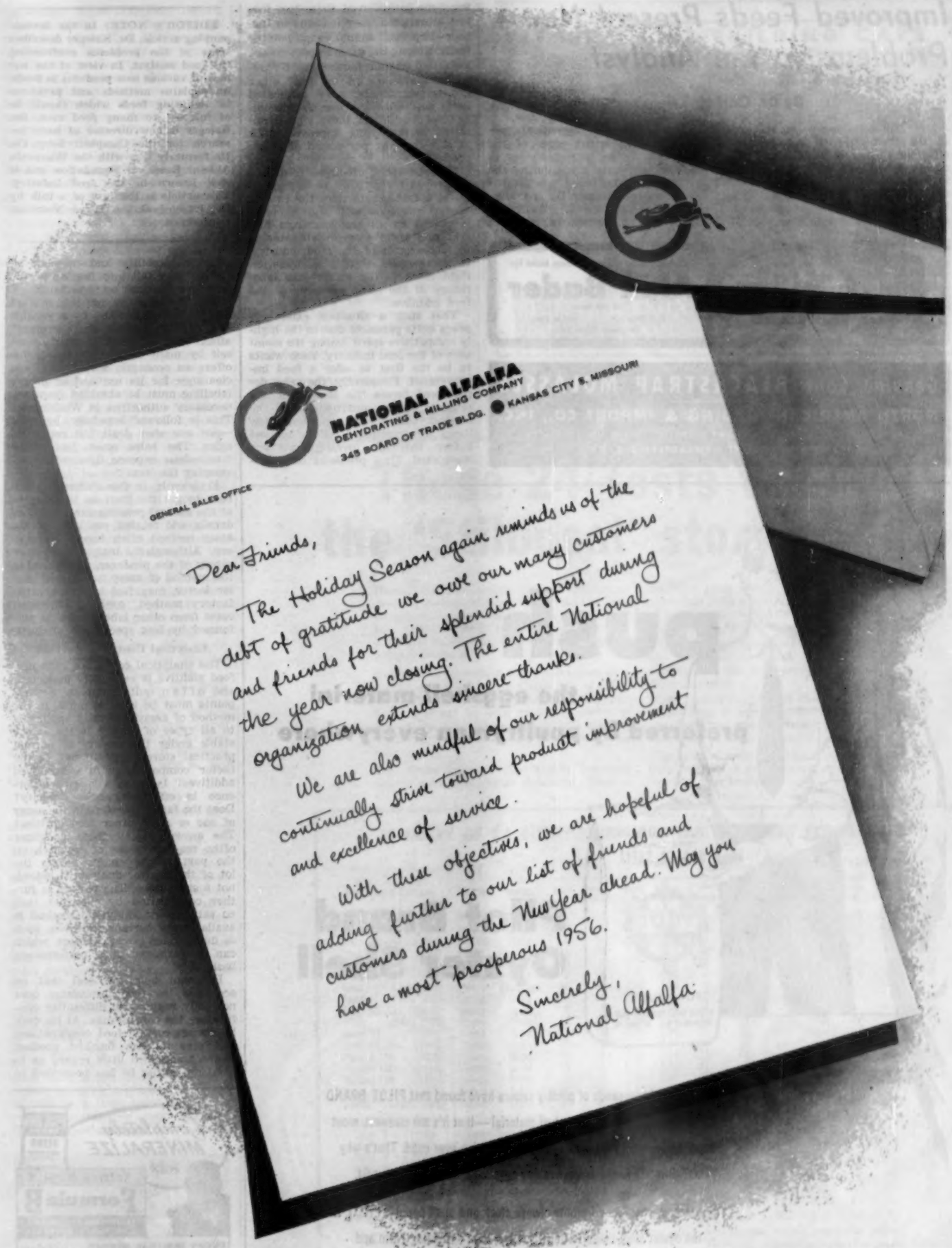
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DEHYDRATING & MILLING COMPANY
345 BOARD OF TRADE BLDG. KANSAS CITY 5, MISSOURI
GENERAL SALES OFFICE
Dear Friends,
The Holiday Season again reminds us of the debt of gratitude we owe our many customers and friends for their splendid support during the year now closing. The entire National organization extends sincere thanks.
We are also mindful of our responsibility to continually strive toward product improvement and excellence of service.
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Improved Feeds Present New Problems to the Analyst

By Dr. Carl H. Krieger

Even since its inception, the goal of the feed industry has been to offer the farmer feeds that will produce the best market animal or bird in the shortest period of time and at the lowest cost. This is attested to by the continued improvement in feed efficiencies and an ever expanding use of natural ingredients peculiar to the various areas of the U.S. Perhaps the biggest strides in this direction were made during the past seven years, being precipitated by the use of vitamin B_{12} and antibiotics. The increase in growth and improved feed efficiencies resulting from the inclusion of these two factors stimulated investigations to further improve animal and poultry feeds. Among the more important are stabilized vitamin factors, more readily available feed entities, other growth stimulants, and medicated feeds to reduce loss due to microbial infection. All of these lend themselves to promoting improved stock at a lower cost per pound of edible product.

Unfortunately, oft-times feeds are "improved," rightfully or wrongfully, at a faster rate than the control analyst can cope with. This problem is shared by all analysts from federal and state control laboratories, to laboratories of the feed industry, to commercial testing laboratories, right down to the source—the laboratory of the basic producer of the feed additive.

That such a situation exists appears quite plausible due to the highly competitive spirit among the members of the feed industry. Each wants to be the first to offer a feed improvement. Frequently, the sales department forces the issue over the protests of the nutritionist and the analyst. Under such conditions, new items are introduced on the market before thorough investigations are completed. Thus problems of stability, compatability and methods of testing may fall into the lap of the feed manufacturer or formulator.

EDITOR'S NOTE: In the accompanying article, Dr. Krieger describes some of the problems confronting the feed analyst. In view of the use now of various new products in feeds, he explains methods and problems in analyzing feeds which should be of interest to many feed men. Dr. Krieger is now director of basic research for the Campbell Soup Co. He formerly was with the Wisconsin Alumni Research Foundation and is well known in the feed industry. This article is the text of a talk by Dr. Krieger at the Texas Nutrition Conference.

The introduction on the market of a new feed additive by a reliable basic producer is not an "overnight" affair. A producer must satisfy himself by many tests that the factor offers an economic advantage. Then clearance for its use and/or proper labelling must be obtained from the necessary authorities in Washington. This is followed hopefully, by sales—not one shot deals but repetitive sales. The sales must justify the tremendous expense involved in developing the item.

Frequently, in this enthusiasm and rush to get the item on the market at the earliest possible date, the finer details and related problems of the assay method often become secondary. Although the analyst in the laboratory of the producer, specialized in the method of assay for the particular factor, may feel he has a satisfactory method, confirmation must come from other laboratories as performed by less specialized analysts.

Analytical Control Important

The analytical control of each new feed additive is extremely important and often quite complex. Several points must be kept in mind. Is the method of assay generally applicable to all types of feeds? Is the factor stable under the variety of normal practical storage conditions? Is the factor compatible with other feed additives? Is there a species difference in effectiveness or toxicity? Does the factor interfere in the assay of one or more other feed entities? The answer to all these questions often requires years of research on the part of the analyst. Thus the lot of the control analyst is, indeed, not a simple one. The picture is further complicated by the fact that no satisfactory analytical method is available for certain additives, such as unidentified growth factors, which can be evaluated on a performance basis only.

I cannot help but feel that on occasions the feed formulator does not fully realize the difficulties confronting the control man. At his desk he devises certain feed combinations and presents the finished product to the trade with little regard as to what difficulties he has presented to

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the analyst. When laboratory reports show that the claim is sustained, every one is satisfied. On the other hand, when low results are reported, the analyst is often subjected to criticism. On occasions this criticism is warranted—analysts are not infallible. However, by and large it usually isn't the analyst's fault. He is presenting the value obtained by the best method of assay available.

It must be realized that in most cases the specific entity analyzed by the laboratory has been subjected to a wide variety of processing conditions involving numerous different individuals from the time it left the hands of the basic manufacturer until it ended up in the final sample. Processing conditions such as time, temperature, moisture, mixing and sampling may singly or in various combinations have a direct bearing on the final assay value.

That the analyst is fully cognizant of the problems facing him is borne out by the many years of research involved in continually improving assay methods. The best example of this is the efforts of the Association of Official Agricultural Chemists which was organized some 70 years ago. Because of the nature of organizational operations of the AOAC, a method presented by the manufacturer must be subjected to several years of collaborative study. These studies are conducted in numerous laboratories staffed with chemists having varying degrees of ability. When the associate referee is assured that the method is practicable, the procedure becomes official and hence acceptable in court. Feed control officials play an important part in this activity and AOAC methods are adopted by this organization. The AOAC is constantly improving and reevaluating older and well established methods and devising practical methods for new feed additives.

I shall not discuss all the problems confronting the analyst, but I do want to point out some of the difficulties still extant regarding well established methods and to call your attention to a number of problems relating to more recent new or improved feed additives.

Proper Sampling Problem

Perhaps the oldest and most persistent problem confronting the analyst is that of proper sampling. No AOAC meeting is held without some time being spent discussing this subject. Many marked changes have been made, but there is still room for improvement. Proper sampling and sample preparation are extremely important. The assay method may be perfect, but if the sample has not been taken or prepared properly the value obtained is spurious as respects the production batch as a whole.

In addition to developing proper sampling techniques, many years of collaborative study have been devoted to checking and rechecking such well established methods as protein, fat and crude fiber. As a check on analysts to assure proper assay execution, samples are submitted periodically to a large number of laboratories performing such analyses. These periodic checks reveal that even with such an old and well established method as for protein, variations up to 2 or 3% may occur.

Obviously with newer factors, wider discrepancies should be and are observed. For example the associate referee on beta carotene has for years conducted a monthly collaborative study (composed of over 80 laboratories) on the beta carotene and moisture content of dehydrated alfalfa. These studies have disclosed that it is not uncommon to have coefficients of variation ranging from 5 to 20% or more, not only for beta carotene but for moisture as well. Consequently, it must be kept in mind that even at best, variations exist between analysts located in different laboratories.

Some methods of analysis seemingly cause less difficulties than others. This may be due to the fact that the factor, per se, is usually found to be present in sufficient quantities (primarily due to its stability) or it does not have the wide commer-

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SUMMARY OF 24 DIETHYLSTILBESTROL CATTLE FEEDING EXPERIMENTS

Where Experiments Were Conducted Agricultural Colleges	Kind of Cattle	Type of Ration	No. Cattle		Av. Daily Gain			% Feed Saved Due to Diethyl-stilbestrol	Dressing %		Fed. Grade*		No. Days on Experiment
			Check Lot	Diethyl-stilbestrol	Check Lot	Diethyl-stilbestrol	% Increase		Check Lot	Diethyl-stilbestrol	Check Lot	Diethyl-stilbestrol	
Iowa AH 188 (1954)	Steers	Grain	8	16	2.13	2.67	25	13	60.7	61.1	8.0	8.4	43
Iowa AH 189 (1954)	Steers	Grain	8	24	2.23	2.72	22	12	60.0	60.4	6.5	6.6	112
Iowa AH 192 (1954)	Heifers	Grain	8	16	2.03	2.29	13	13	58.4	58.0	7.0	7.0	113
Iowa FSR 107 (1954)	Steers	Roughage	20	20	1.10	1.21	10	10	—	—	—	—	127
Iowa AH 193 (1954)	Steers	Half & Half	8	8	1.71	1.99	16	11	61.3	61.5	7.0	6.6	243
Iowa AH 194 (1954)	Steers	Grain	8	14	2.36	2.53	8	7	61.8	61.2	7.0	6.4	120
Iowa (July 1955)	Steers	Roughage	40	40	1.00	1.08	8	8	—	—	—	—	119
Iowa (July 1955)	Calves	Grain	9	18	2.22	2.45	10	6	—	—	—	—	224
Colo. No. 605 (1955)	Steers	Grain	9	8	2.30	2.90	26	21	—	—	—	—	84
Mich. (June 1955)	Steers	Grain	14	14	2.30	2.60	13	20	61.9	62.0	6.7	7.4	98
Nebr. 71 (1955)	Steers	Grain	15	15	2.02	2.40	19	12	64.0	63.2	8.8	8.6	112
Ohio No. 94 (1955)	Steers	Grain	21	21	2.17	2.47	14	13	—	—	—	—	84
Purdue 139 (1955)	Steers	Grain	10	10	2.33	2.64	13	11	—	—	7.3	6.6	123
Purdue 148 (1955)	Steers	Grain	9	9	2.71	3.30	21	18	—	—	—	—	98
Purdue 149 (1955)	Calves	Grain	9	9	2.37	2.84	20	15	—	—	—	—	98
Tenn. (1955)	Steers	Grain	24	16	1.38	1.77	28	18	57.5	57.8	5.0	5.0	98
Texas (April 1955)	Steers	Grain	10	10	2.38	3.03	27	11	59.8	59.8	5.8	5.4	120
Feed Manufacturers													
Mfgr. T (1955)	Steers	Half & Half	10	10	2.35	2.91	24	12	—	—	—	—	56
Mfgr. U (1954)	Steers	Grain	10	10	2.75	3.37	23	14	60.4	59.8	7.1	7.4	70
Mfgr. V (1954)	Steers	Grain	9	10	2.03	2.27	12	5	—	—	10.0	10.2	117
Mfgr. W (1955)	Steers	Grain	16	16	2.28	2.70	18	7	62.30	62.29	6.3	7.5	180
Mfgr. X (1955)	Steers	Grain	30	30	2.84	3.08	8	13	57.40	57.33	7.0	7.1	96
Mfgr. Y (1955)	Heifers	Grain	35	35	2.35	2.69	15	13	59.48	59.91	5.0	5.0	62
Mfgr. Z (1955)	Steers	Grain	12	12	2.18	2.76	27	19	59.58	59.60	8.0	8.0	150
Average All Experiments							**17.8**	**12.8**	**60.3**	**60.3**	**7.0**	**7.1**	

*Federal grade based upon prime plus=12, prime=11, prime minus=10, choice plus=9, choice=8, choice minus=7, good plus=6, good=5, good minus=4, commercial plus=3, commercial=2, commercial minus=1.

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cial competitive implication that other factors do. For example, thiamine, riboflavin, niacin, pantothenic acid, choline and urea are factors which are not particularly controversial. However, it must not be concluded that the methods of assay for these entities are so well established that inter and intra laboratory disagreement does not exist—because it does, but apparently to a lesser degree than for other new factors.

These methods are also subjected to constant study with ideas of improved methodology in mind. In fact, in the assay method for pantothenic acid, it was just within the past few years that it was demonstrated that natural materials must be subjected to an enzyme treatment prior to assay to liberate bound pantothenic acid. Since this bound form is biologically active, but not active in the usual microbiological assay, it is important to release it for a more absolute measurement of pantothenic acid.

In contrast to the determination of thiamine, riboflavin, niacin, pantothenic acid, choline and urea, some of the newer factors are causing varying degrees of difficulty. This is to be expected since their rather recent introduction into feeds has not allowed sufficient time for the analyst to thoroughly evaluate the assay procedure. Among these are vitamin B_{12}, antibiotics, arsenicals, coccidiostats and diethylstilbestrol. I shall discuss each of these briefly.

VITAMIN B_{12} — Vitamin B_{12} has been found to be of particular value for both poultry and four-footed animals. At present a microbiological method of assay has been designated as official by the AOAC for test materials containing 0.1 microgram or more of vitamin B_{12} per gram. Unfortunately this method measures not only biologically active forms of B_{12} but pseudo forms as well. However, since the frequency and the extent of the occurrence of pseudo forms of vitamin B_{12} have not been sufficiently well established to warn against the possible gravity of this situation, concern about this weakness in the assay method is not warranted at this time. Perhaps the best advice, if doubt should exist, is to purchase vitamin B_{12} supplements from a reliable source.

ANTIBIOTICS — The commonly employed antibiotic feed additives are penicillin, Terramycin, Aureomycin and Bacitracin. Each of these has been demonstrated to exert a definite weight gain and feed efficiency improvement, particularly in the poultry field. Although methods of assay for these antibiotics have been fairly well established for relatively high potency pharmaceuticals, the use of these same antibiotics in feeds at concentrations of 2 to 5 parts per million has confronted the analyst with a number of problems.

Due to the extremely low quantities of these antibiotics in a rather heterogeneous and varying medium as a feed, the assay of such a material for a specific antibiotic is difficult. The quantitative extraction of an antibiotic from a feed presents a number of problems which in turn increases the possibility of inherent error in the assay. Although considerable progress has been made in this regard, much room for improvement remains.

ARSENICALS—In the field of arsenical additives such as 3-nitro-4-hydroxyphenylarsonic acid and arsanilic acid, fairly well established methods of assay have been devised. Although these assay methods are subject to certain limitations, similar to those observed for other entities, an important fact to keep in mind is the relatively small range between the effective use level and the toxic level. A misplaced decimal point may

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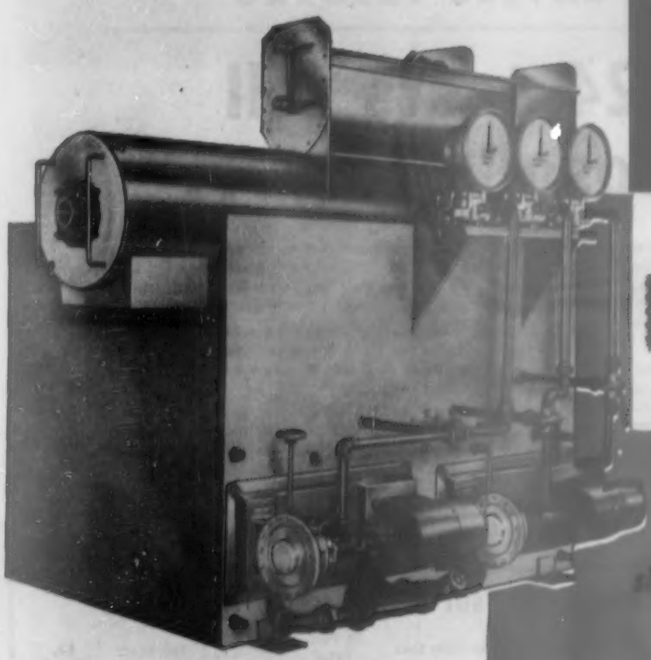

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make all the difference in the world between success and failure. Such an error is far beyond the control of the analyst, but it is one which would certainly show up in his analysis.

COCCIDIOSTATS—In the publication of data on the pros and cons of the various factors, either singly or in combination with others as respects increased growth and improved feed efficiencies, it is always assumed that normally healthy stock are concerned. Perhaps the most important factors allowing for such a normal response are those controlling or preventing coccidiosis. Unless the animal or bird is healthy to start with, no known nutritional factor or factors will elicit a response. Many coccidiostats have been recommended and used with varying degrees of success. However, the ones which have shown the greatest promise are certain sulfonamides, furane derivatives, phenylarsonic acids, bisphenols, sulfur, a bisnitrophenyl disulfide, and a carbanilide pyrimidine.

Due to the relatively small use dosage of many of these coccidiostats as well as the inherent complexities of some of the methods, considerable difficulty is experienced by the analyst in accurately determining these agents. As with the arsenicals, caution must be exercised in the use of the coccidiostats as in many cases there is only a small difference in the effective and toxic levels.

DIETHYLSTILBESTROL — Although a synthetic estrogen, commonly known as diethylstilbestrol, has been available and used experimentally for a number of years, it is just within the past year that much attention has been focused on its commercial use. Recent studies have shown that the oral administration of this hormone to either steers or heifers resulted in a marked increase in the rate of gain and feed efficiency without the undesirable side effects observed with pellet implantation. Quantities as low as 10 mgs. per animal per day are sufficient to cause these increases.

Since diethylstilbestrol is an extremely potent drug and since meat from animals fed this factor enters the human dietary as well as that of other animals, the Food & Drug Administration has been particularly watchful of developments in this area. Considerable attention has been paid to the possible storage of this hormone in the various edible tissues. It has been the chore of the analyst to develop means of determining quantitatively any evidence of such storage. Although there is a chemical method which gives fairly reliable values on the more potent materials such as feeds, it is of little value when applied to animal tissues where amounts on a parts per billion basis have to be detected.

At the present time the most acceptable and accurate method is a biological one. In this assay the dried tissues are fed to either immature or ovariectomized mice for a period of five days at which time the uteri are removed and weighed. Hormonal activity is ascertained by an increase in uterine weight and the quantity present is determined from a standard curve established by feeding mice known quantities of diethylstilbestrol. At the present time this assay technique is still in the developmental stage.

Stability Problems

In addition to the newer feed additives very serious consideration has been given to improving some of the older ones primarily from the standpoint of stability. Almost all the basic producers of vitamin A and vitamin D for feed, food and pharmaceutical use have devoted much effort in this direction. In so doing, they have not only increased the use period of these vitamins but have also complicated the assay picture as far as the analyst is concerned.

The stability of vitamin A in either a finished feed or premix has been markedly enhanced by means of a protective coating such as gelatin,

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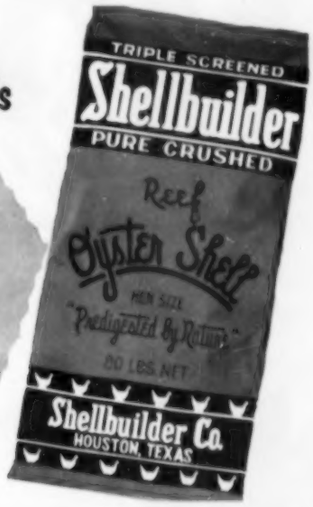

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or combinations of gelatin and carbohydrates, or by pectin, or a microcrystalline hydrocarbon. Also certain antioxidants such as vitamin E or DPPD (diphenyl - paraphenylenediamine) have been added to protect the vitamin A. With the advent of these stabilizing measures, either physical or chemical, new problems confront the analyst. The old solvent extraction procedure for vitamin A in mixed feeds does not recover all of the vitamin A. The protective coatings do not allow for complete extraction. Hence other means, such as saponification prior to extraction, have to be used. Furthermore such an antioxidant as DPPD interferes with the vitamin A determination causing higher values than can be accounted for on the basis of the vitamin A addition. Consequently, the interfering material must either be removed or corrected for to obtain the proper value.

None of these modifications of the old solvent extraction method have been finalized as yet. The associate referee on vitamin A in mixed feed is in the process of subjecting alternate methods to collaborative study. Thus it may be several years before the analyst will have a truly reliable method of assay. Beta carotene has also been the subject of investigation from the standpoint of using antioxidants to stabilize this provitamin. As with vitamin A, some of these antioxidants interfere with the assay yielding spurious values.

A similar situation appears on the horizon with vitamin D. There are a number of stabilized vitamin D's on the market now. As far as I know, they are all stabilized by means of various coatings. Although when fed as such to the rat (vitamin D is the only vitamin still requiring biological means of assay) the vitamin is available and hence gives a response. The questions of particle size, sifting, sampling and sample preparation appear to be problems in evaluating this entity. Recommendations by the manufacturers have indicated that the feed be saponified and extracted prior to assay. These steps are tedious and expensive, markedly increasing the cost of such an assay.

No definite procedure in handling stabilized vitamin D has as yet been promulgated and it appears that considerable time will pass before such a method is finalized. In the meantime the analyst has to cope with the problem to the best of his ability. Mention of vitamin D assays can not be made without pointing out that the rat can not distinguish between vitamin D_3 and vitamin D_2. The chick can—hence to be assured of the presence of vitamin D_3, the analyst has to resort to a chick assay. Since the method of assay for vitamin D is a biological test, the error in such an assay tends to be greater than in most microbiological and chemical assays.

Vitamins E and K

In recent years two other fat soluble vitamins, namely E and K, have received considerable attention as important feed additives to counteract an increasing prevalency of what appears to be a nutritional deficiency of these vitamins.

Vitamin E has been demonstrated to be effective in preventing the incidence of nutritional encephalomalacia in poultry, also referred to as "crazy chick disease." Since this condition is appearing in various areas throughout the country, considerable interest has been centered on vitamin E and several other antioxidants such as DPPD. It is believed that the metabolism of unsaturated fatty acids is normally controlled by antioxidants such as vitamin E and that an imbalance in this relationship precipitates the disease

The accurate determination of vitamin E is difficult and still a subject of considerable investigation. As you know, there are a number of natural and synthetic tocopherols as well as stereoisomers, each of which has a different biological activity. Naturally in feeds one is concerned only with the more active biological forms. The biological rat assay for vitamin E is extremely time consuming (10 weeks) and hence very expensive. There are several chemical methods, but in most cases these have been criticized as measuring inactive forms of tocopherol or are subject to interference by other factors present in feeds.

Perhaps the most reliable method, yielding values comparable to those obtained by the rat assay, is that employing a molecular skill. Although this method of assay may prove to be the most precise, it will still be rather expensive due to the high cost of the equipment.

Also in recent years a condition in chicks apparently due to a vitamin K-deficiency has been observed. This condition manifests itself in a hemorrhagic state in chickens and turkeys. It has been suggested that the wide use of antibiotics and sulfa drugs has caused changes in the mi-

(Continued on page 72)

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Mr. Feed Man:

Your Future Hog Feed Customer

By Dr. Damon Catron
Iowa State College

EDITOR'S NOTE: There is increasing evidence of the "revolution" which has been and is taking place in agriculture. Increased efficiency and specialization are readily apparent in various types of farming, and these trends are expected to continue or accelerate. Hog production, authorities point out, has lagged behind some of the other phases of animal agriculture. However, this situation is due for a change. Dr. Damon Catron, professor of animal husbandry at Iowa State College and well known authority on swine feeding, points out in the accompanying article that there will be more and more specialization, greater and greater efficiency in hog raising. And, he urges, feed men should be watching the trends and have feeds and feeding programs ready for the increasing number of increasingly efficient hog raisers. Dr. Catron describes the changes which he feels will come in swine breeding, feeding, management and housing—all a part of a gradual "revolution" which will affect hog production just as it has affected poultry production and other phases of agriculture. The feed man who is on top of or ahead of the hog raising trends, Dr. Catron says, will be the one who will succeed in serving the future hog feed customer.

• • •

The feed manufacturer or dealer who isn't prepared to meet the needs of the hog producer of tomorrow is going to get caught short.

No one claims that the hog business will change overnight, but the trends are already apparent. Gradual though they may be, there'll be some real changes made.

There will be more and more specialization, greater and greater efficiency. It's inevitable. And the feed man who will be ready with feeding programs geared to meet the needs of tomorrow's producers will be the successful feed man.

Why will the changes in hog production come? Well, all you have to do is look at what's going on among the producers of pork's competition for the housewife's protein food dollar.

Broiler production already is tremendously specialized and efficient—with birds bred to gain rapidly and efficiently, with special housing and environmental control, with highly nutritious scientific feeds being used almost exclusively along with good management and disease control. Turkey production similarly is more efficient. Cattle feeders are becoming more efficient—with modern supplements to make better use of low-grade roughage, with new feed additives which stimulate gains, with better parasite control, with modern, mechanical labor-saving handling of new feeds. There is more specialization in egg production, too, with developments like caged layers. Many dairy farms already are pretty much like milk factories with automatic barn manure cleaners, silo unloaders, milking parlors, milking machines and stainless steel bulk milk coolers.

How can pork production continue to compete with such efficiency? It can't as long as we have production inefficiencies like a 25% death loss in baby pigs, feed conversion rate of 4 lb. or more feed per pound of gain, excessively fat hogs, and wide hog price fluctuations because of uneven marketing.

Will Have to Change

These things will have to change, eventually, if pork is to be attractive enough—in both quality and price—to maintain or improve its competitive position at the meat counter.

The changes will come first among the hog farmers with the most know-how, with the most capital. They will specialize to a greater extent, and with that specialization will come stepped up efficiency and more economically produced pork. The inefficient producers will be squeezed out—unless subsidized.

This may mean that we will have fewer but larger individual hog raising operations. At any rate, it will mean that the average farm volume in hog production will climb. What is considered an average hog farming operation today may not even exist some years hence. The average hog farmer of tomorrow will have more know-how, more and better facilities. He will be able to put to work profitably the advances that have been or will be made in nutrition, breeding and management.

Therefore, it behooves the feed manufacturer and dealer to be watching the trends, to have feeds and feeding programs and management recommendations to serve the increasing number of increasingly efficient hog raisers.

All of this represents an opportunity to sell more and better feeds. But the feed men will have to keep up with and help the better hog raisers. **The average feeding program today won't be good enough tomorrow.**

Most hog feed manufacturers have devised feeding programs and rations which are beamed at the average hog producer of today. But, as time goes by, this average hog producer will become better and better, more and more efficient. The average will be raised. And, it will be very necessary for the hog feed manufacturer and his dealers to remodel their swine feeding programs, their swine rations and the service which they are giving to their hog feed customers.

This is quite obvious already because many top-notch, efficient hog producers are interested in developing swine feeding programs geared more nearly to the "life cycle" nutritional needs of the pig. They are seeking rations that they are not now able to buy from many feed firms.

If there are support programs which make it easier for the less efficient producers to continue in the hog business, the trends toward greater efficiency and specialization will be slowed. However, the economics of it all still dictate that some changes will be made in this "revolution" which is now hitting other phases of agriculture.

Already we can formulate and make rations which are capable of producing much better results that we can get applied under today's average conditions of breeding, housing and management. Putting the high-powered feeds into the average environment is like putting a high-powered V-8 engine into a Model T body and chassis. It just doesn't work out.

For that reason much of the future improvement in hog raising will come through better breeding, housing, management and disease control.

LIFE-CYCLE PRODUCTION — In the future we will be developing through research and applying life-cycle swine production methods.

For the proper kind of housing and management as well as nutrition, it is well to divide the life cycle of swine into four parts: (a) pre-gestation and gestation; (b) farrowing, short lactation and nursery period; (c) young growing pigs from 25 to 50 or 75 lb.; (d) growing-finishing period from 50 lb. to market weight.

First let's look at what might be a typical hog raising system of the future, adapting specialized housing and equipment to the needs of swine during each phase of the life cycle. Then, we can examine briefly some of the developments, trends and problems behind this system.

It should be noted that the segregation of pigs in the different stages of the life cycle will be an important means of breaking the disease chain, of controlling disease.

Gestation and pre-gestation: Producers will make maximum use of pasture, hay or silage, and sows will be kept in fields during both summer and winter. The economical portable shade-shelters will be a sufficient way of housing.

Farrowing, lactation and pig nursery: New farrowing houses and pig nurseries may be built, and these will give the producer the best control over the environment. Standard equipment in this building will be such things as farrowing stalls, auto-

Farrowing stalls will play an increasingly important part in more efficient hog raising. They make it possible to cut down on pig losses from overlaying and injury, save labor and make it easier to shift pigs from one sow to another to equalize litters.

• • •

Pork's Share of Consumer Dollar Dips

WASHINGTON — Recent U.S. Department of Agriculture comments point up the problem which pork has in competing with other meats. It is a problem which the swine industry will have to overcome if it is to maintain or improve its competitive position.

Answers to the problem are expected to come in better breeding and increased efficiency in hog feeding and management. (See the accompanying article by Dr. Damon Catron.)

Over many years, USDA notes, consumers in the U.S. have turned away from pork toward beef. This shift is shown dramatically in the accompanying chart. The per cent of incomes spent for beef has been stable; that spent for pork has decreased.

Percentage expenditure for pork recovered briefly just after the end of World War II. Meats and fats were scarce relative to total demand during that period of general price inflation. But expenditures for pork decreased fast afterward. The downtrend, continuing in 1955, explains much of the weakness in prices of

(Continued on page 60)

Dr. Damon Catron

matic water founts, air conditioning and temperature control, radiant-heated floors, new feeding and watering devices for the baby pigs.

Pregnant sows will be brought into the farrowing unit of this building and will be kept in holding pens until they are ready to farrow. Then they will be placed in farrowing stalls and left there until the pigs are weaned, at about two or three weeks of age or 8 to 10 lb. in body weight. Farrowing stalls make it possible to cut down on pig losses from overlaying and injury, save labor and make it easier to shift pigs from one sow to another to equalize litters.

When the pigs are weaned, the sows will return to the fields, and the pigs will go to a separate section of the same building—the pig nursery. The controlled environment of the pig nursery will cut down on disease and improve gains and feed conversion, and these facilities can be used to the maximum with early weaning and multiple farrowing (at least 3 and up to 7 litters per year).

Growing unit: When the pigs are about five weeks old and weigh about 25 lb., they can be moved to a separate building—the growing unit—with the open area between these buildings serving as a disease barrier. The growing unit does not have to involve as much in the way of construction cost, although pig comfort again should be taken into consideration. Also, as in other units, water, feed and cleaning facilities and devices which effect labor savings should be used.

Growing-finishing unit: At 50 lb. the pigs may be moved into the final stage where they will remain until they reach market weight. The pigs may go to portable shade-shelters such as those for sows out on pasture, or the producer may keep them on concrete in a unit which is economical but well planned with labor-saving devices for feeding, cleaning, etc.

The foregoing provides some idea of what the facilities might be in a specialized hog operation of tomorrow. In some cases, the specialization might be carried even further. We may have more producers specializing in the raising of just feeder pigs, and we may have more producers specializing in the growing and finishing of purchased feeder pigs.

Now, the feed man wants to know, how might these swine be fed in the hog operation of tomorrow?

FEEDING PROGRAM—Again, the needs of the life cycle of swine should be kept in mind. We won't try to get too much simplicity at the expense of profit-making efficiency in the specialized hog operation. We will get maximum efficiency by fitting the rations to each stage of the life cycle, getting practical but scientific feeding programs.

As shown on the accompanying chart (page 56), the most critical period in feeding is the period from farrowing to 50 lb. The best possible rations are needed at this time. And, just as the producer should spend most of his housing and equipment dollar to take care of this period, he should invest good shares of his feed dollar in this period. Then he can economize more during the pre-gestation and gestation period and the growing-finishing period.

It is during this farrowing-to-50-lb. period that the feed man has the greatest responsibility to the feeder in providing and advising on the right feeds. Also it represents the greatest opportunity for feed business.

Sows: Research has shown that maximum use should be made of pasture, hay or silage for sows, thus economizing during this part of the life cycle. The sow must get all required nutrients, with the total ration balanced. But too many sows have been overfed on energy; the result has been poor conception and more difficulty at farrowing. Early weaning means sows won't have to gain as much weight during gestation. Thus, the emphasis will be on forage in the summer and hay or silage in the winter properly supplemented. Sows then will need only 1½ to 2 lb. of grain and ½ to 1½ lb. of supplement daily, cutting costs of feed per live pig farrowed by 50%.

The bulky rations before and after farrowing will cut down on constipation and udder trouble problems at the time of farrowing. However, rations with more energy will be needed to get the sow on full feed gradually for the lactation period of two to three weeks.

Baby pigs: As early weaning increases with greater specialization and improved facilities, there will be more need for special feeds for baby pigs. The pigs may be weaned at one to three weeks, or up to five weeks

Early weaning and scientific feeding and management and housing of young pigs—now practiced by the more efficient and better equipped hog raisers—are expected to become a regular part of the program of the swine feed customer of the future.

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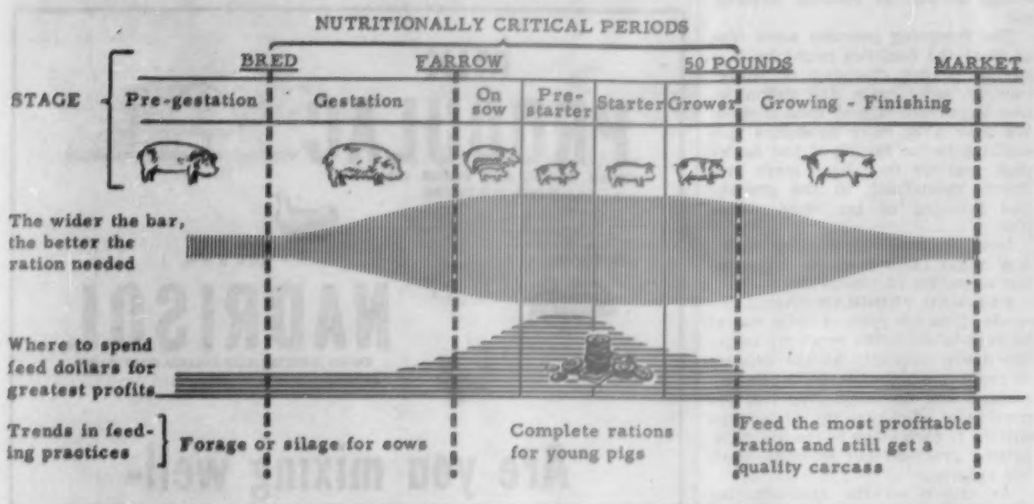

in some cases. The baby pigs will be offered a good pre-starter the third day while still with the sow, and then a little later they will get a highly fortified starter, both of which can best be supplied by the commercial feed manufacturer and dealer. By the end of the starter period, the pigs should weigh about 25 lb., at five weeks of age.

In this program, each pig should be fed 5 lb. of a special 25% pig pre-starter, then changed over and fed 20 lb. of an 18% pig starter.

Growing: From 25 to 50 lb., in the growing unit, the pigs should be fed a complete grower ration. During this growing period, each pig should be fed about 55 lb. of a 16% protein grower ration.

Growing - finishing: During the period from 50 lb. to market, the pigs should be divided into three groups—50 to 100 lb., 100 to 150 lb., and 150 lb. to market weight. These pigs will be fed increasingly more economical rations during this period. Also, it is during this period that the farmer can elect to use the complete "least-time" ration, putting gains on as fast as possible, or the "least-cost" ration, putting gains on as inexpensively as possible. Or the farmer may decide to self-feed supplement and grain free - choice — depending on which method will make him the most money.

With more attention paid to rates of feed conversion, it is recognized that the least feed per pound of gain is required for young pigs. For pigs weighing 25, 50, 100, 200 and 250 lb., the amounts of feed needed per pound of gain are 1.5, 2.9, 3.4, 4.3 and 5.5 lb., respectively. Thus, it is readily apparent that the farmer can well find it profitable to spend more for feed during the early stages of the life cycle of swine.

In connection with this feeding program, it should be remembered that the level of nutrition during one period of the life cycle can affect the performance during subsequent periods. The carryover effects of feeding may show up either as stored nutrients in the body of the animal or as a reflection of "well-being" or thriftiness.

Only a careful life-cycle feeding program makes it possible to take advantage of the principle of carryover of feeding from one period to another. From the life-cycle feeding chart, it may be seen where the producer should and should not economize in swine feeding.

The successful hog producers of the future will be those who increase the volume of their operations to a point of maximum efficiency for applying new research findings in life-cycle nutrition, housing and management.

Complete Rations

There is an increasing trend toward the use of complete ground and mixed rations for hogs. As compared with self-feeding of corn and supplement, feeding is more controlled when complete rations are fed. Nutritional needs are more specifically met, and there can be savings in feed and labor

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Test records have shown that pigs of similar weights making similar gains on the same amount of feed per pound of gain eat anywhere from .7 to 3 lb. of the same supplement per head each day. The ratio between corn and supplement varied from 4 to 1 to as high as 9 to 1. The excessive protein in some cases didn't boost feed efficiency or gains; all it did was hike the cost.

Controlled feeding provides better nutrition and lowers cost.

Also, in line with the trend toward larger and more automatic operations and more labor-saving devices, there will be greater use of bulk feed on the hog farm.

In the management of hogs in the future, as noted above in connection with housing, particular attention will be paid to disease control by the careful segregation of animals by different stages in the life cycle. Also, producers will find it important to help break the "disease-chain" by completely emptying each production unit, cleaning, steaming, disinfecting and letting it sit idle for about two weeks before putting in the next group of pigs.

A sound vaccination program will be another part of the disease control efforts. Important, too, will be the use of corrective rations which help recovery from disease. If the disease level is high, it is important that the feed get more antibiotic and vitamin fortification.

More Drylot Production

Related to management is the prospective development of more concrete drylot production of pigs from farrowing to market. While forage will be important in feeding of sows, modern nutrition knowledge and new findings mean that drylot feeding can be more profitable. Such problems as disease and parasites in lots and fields and lack of certainty about pasture crops, along with more mechanical manure handling, will bring more concrete drylot hog production. However, if a drylot program is to be successful, the producer will have to make use of the best management, disease control and feeding techniques along with balanced rations.

The environment of swine at the various stages of the life cycle will get special attention and control. Emphasis will be put on comfort and sanitation, with elimination of various stress factors such as excessive heat or cold, noise and disease.

Use of new developments in heating, ventilating and air conditioning will be applied in housing, and more attention will be paid to the proper floor space and watering and feeding facilities. Producers will recognize more and more that these factors in good management are necessary for the best feeding results. You can keep a pig warm cheaper with fuel oil than by feed.

Some of these developments will call for greater investment, greater capital. But the producers with the know-how and capital will make this investment in specialization and efficiency, and they will survive future "shakeouts" and go on to more profitable production.

Early Weaning

Part of all this is the trend toward more early weaning—weaning of baby pigs at 1 to 3 weeks, not later than 5 weeks. Early weaning on the **proper rations** has already proved itself in midwestern areas, and it will continue to grow in popularity with more specialization and the use of the best pre-starters and starters, along with modern farrowing houses and pig nurseries. The advantages of early weaning over sow raising of pigs are continually becoming more important.

The development of pre-starters for early weaning will result in more farrowings (multiple farrowing) throughout the year, not just at habitual spring and fall times. Also, better heating and the use of farrowing stalls and good sanitation practices will make farrowing practical and easier at any time.

With these trends, there will be more producers who will be farrowing from three to six times a year, not just once or twice. This multiple farrowing will bring steadier marketing and more stable hog prices—therefore, a more stable hog industry.

All of the management and nutrition developments cannot be used to the best advantage, however, unless the right kind of hogs get the benefit.

Scientific Breeding

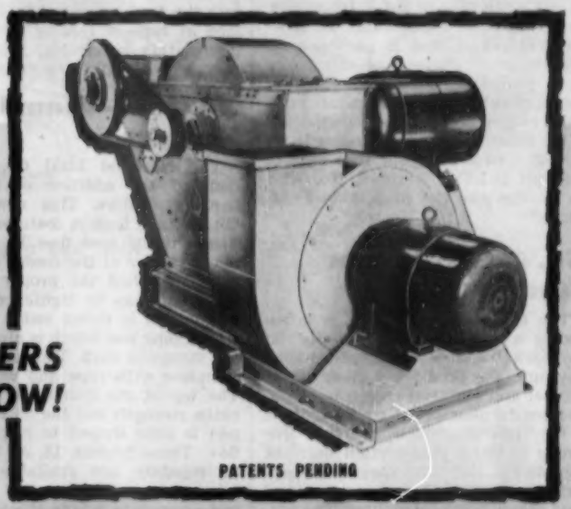
That means that there will be increased emphasis on scientific breeding principles, with the development of rotation breeding systems to obtain more hybrid vigor, inbred lines, hybrids and better breeds.

An animal's genetic make-up determines its potential in gains, feed efficiency, disease resistance and leanness of carcass. And, through application of litter testing and boar testing programs, we will get hogs that will convert their feed into lean pork faster and more efficiently.

Breeding stock in the future will be sold on a record-of-performance basis. Boar and sow buyers will use as guides in their purchases the data which will be available on rate of gain, feed efficiency and carcass quality.

This trend means that we will see swine progeny testing stations all through main hog producing areas. Already there are progeny testing stations in some states, and more are being set up constantly. In one state, Illinois, the feed men have taken an active part in setting up boar testing

(Continued on page 60)



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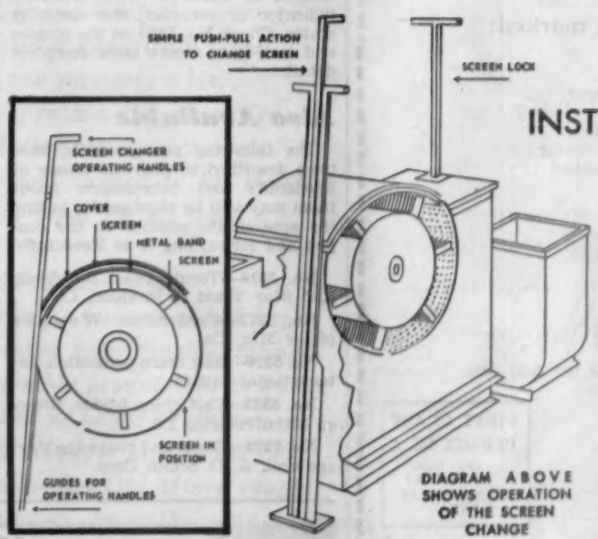

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No. 5358—Feeders

"Application of Principles of Instrumentation to Liquid and Dry Feeders" is the title of an eight-page preprint of a paper by Paul A. Coffman and issued by Omega Machine Co., division of B-I-F Industries, Inc. This preprint contains 11 flow-parts diagrams, and is part one on "Controllers." Purpose of this paper is to provide a basic knowledge of the application of instrument principles to gravimetric feeders, especially the function of the controller in its various forms. For your free copy of Preprint B-I-F-M65 check No. 5358 on the coupon and mail it to Feedstuffs.

No. 5363—Rumen Stimulator

The Cudahy Packing Co. is introducing a new rumen stimulator on the market. Called by the trade name, Bovirum, the product is made up of natural and cultured rumen bacteria. The company asserts that Bovirum is a dry powder which contains live rumen bacteria plus certain nutrient ingredients, including sugar. The bacteria are collected from choice and good steers before slaughter. The animals are inspected before and after slaughter by U.S. government inspectors and the rumen material collected is put through additional tests at the Cudahy laboratories. The company indicates that the product may be used (1) for earlier development of young calves, (2) to stimulate the appetite of unthrifty cattle, (3) for preventing scours, (4) restoring normal rumen activity following disease, (5) as a preventive of bloat, (6) to restore normal bacteria population following therapeutic doses of antibiotics. The product may be mixed into the feed or spread on top of the feed at time of feeding. For further information check No. 5363 on the coupon and mail it to Feedstuffs.

No. 5362—Hanging Feeders

The National Ideal Co. has announced the addition of four new hanging feeders. This new line of "Spin-Quik" feeders features easy adjustment for feed flow by the spinning cylinder of the feeder and when it has reached the proper height a wing nut may be tightened. The lip of the pan is rolled inside. It has a non-tipping pan which is always level, the company says. The feeders come complete with rope and wood block. The top of the cylinder is rolled for extra strength and the bottom of the pan is cone shaped to help the feed flow. These feeders, 15, 20, 25, and 30 lb. capacity, are available both for regular and for premium use. For more complete details check No. 5362 on the coupon and mail to Feedstuffs.

No. 5361—Scale Bulletin

A new six-page, two-color bulletin describing a versatile bulk weighing scale for process weighing is offered by Richardson Scale Co. Described is the model E-50 scale which is electrically controlled and pneumatically operated. It is said to be completely automatic in operation. It will weigh nearly all dry, granular, small lumpy, crushed and powdered materials. The bulletin discusses the scale's construction, capacity, accuracy, and process weighing features. It describes such special features as a hopper door flapper, different inlet chutes, recording counter, accurate knife edge weigh beam and optional agitator and subsidiary beam equipment. For more complete details check No. 5361 on the coupon and mail it to this publication.

No. 5359—Drag Conveyor

The Southern Equipment Co. has on the market a product called by the trade name, Seco conveyor, said to be a fully automatic drag conveyor. Sold in conjunction with the Seco hammer mill, the conveyor is described as stopping automatically when the mill begins to load and starting automatically as the load eases. The unit will convey any feed in any amount, it is claimed, and is built of steel with a variable-speed motor and shielded double chain drag. Round adjustable ends, double bottom and baffle plate prevent waste, it is said. Sizes range from 12 to 36 in. in width. Secure more details by checking No. 5359 on the coupon and mailing it to Feedstuffs.

No. 5360—Feeder

The Omega Machine Co., division of B-I-F Industries, Inc., is manufacturing the Hi-Weigh, model 37, belt gravimetric feeder for continuously feeding dry materials at medium to high rates. This feeder, with a feature called Sens-A-Gram, has a super-sensitive controller which maintains accuracies well within + or — 1%, it is claimed. It offers built-in 100-1 variable speed transmission and a single power source with no auxiliary drives. Being introduced is a new line of gravimetric feeders of the loss-in-weight type for feeding a wide range of liquids and solids. Simplex and Duplex models are available in several sizes for feed rates from 1 lb./hr. to 60,000 lb./hr. Equipped with a "built-in memory," the feeder, with an accuracy of + or — ½% by weight, is available with totalizer, indicator or recorder, the company states. Check No. 5360 on the coupon and mail it to secure more complete details.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 5316—Torula yeast for feeds, Red Star Yeast & Products Co.

No. 5317—Feed mixer, Wenger Mixer Mfg. Co.

No. 5320—Salt drum promotion, International Salt Co.

No. 5322—Calf creep feeder, Brower Manufacturing Co.

No. 5323—Grain and roughage storage unit, A. O. Smith Corp.

No. 5325—52-ft. tubular grain elevator, West Fargo Manufacturing Co.

No. 5326—Feed aroma enhancer for use in pig starter formulas, Dodge & Olcott, Inc.

No. 5327—Vertical feed mixer in three sizes, Fort Worth Steel & Machinery Co.

No. 5328—Pressure sensitive tape for patching multiwall bags, Behr-Manning Division, Norton Co.

No. 5329—Folder on portable formula feed blender, Barnard & Leas Manufacturing Co.

No. 5330—Plastic base material to coat boxcars, J. W. Mortell Co.

No. 5331—Hanging feeder for poultry and turkeys, Rhinehart Manufacturing Co.

No. 5332—Chart on protein balancing with methionine in broiler rations, Specifide, Inc.

No. 5334—Corn sheller, Bryant Engineering Co.

No. 5333—Feedstuffs energy values booklet, Limestone Products Corporation of America.

No. 5335—Premix for cattle fattener feeds, Poul-An Laboratories, Inc.

No. 5336—Packaging and application of poultry medicinals, Vineland Poultry Laboratories.

No. 5337 — Bulk-bag feed body, Baughman Manufacturing Co.

No. 5338 — Poultry feeder units, Brower Manufacturing Co.

No. 5339 — Molasses mixer, Fort Worth Steel & Machinery Co.

No. 5340—Mastitis treatment, Dr. LeGear Medicine Co.

No. 5341—Seed treater, Panogen, Inc.

No. 5342—Stationary feed manufacturing units, Daffin Manufacturing Co.

No. 5343—Livestock minerals booklet, Barton Salt Co.

No. 5344—Bulletin for processing operations, Fuller Co., subsidiary of Hershey Machine & Foundry Co.

No. 5345—Rotary Airlock feeder, Prater Pulverizer Co.

No. 5346 — Straddle carrier, Ross Carrier Division of Clark Equipment Co.

No. 5347 — Flock record chart, American Scientific Laboratories.

No. 5348—List of special days—50¢ a copy, order from Domestic Distribution Dept., Chamber of Commerce of the U.S., 1615 H St., N.W., Washington 6, D.C.

No. 5349—Feeder for starting pigs, Farmer Feeder Co.

No. 5350—Hopper magnet, H. C. Davis Mill Machinery Co.

No. 5351 — Hog wormer, Pemco Products, Inc.

No. 5352 — Egg grader, National Poultry Equipment Co.

No. 5353—Fire alarm system, Seedburo Equipment Co.

No. 5354—Booklet on animal fat handling and mixing systems, Wenger Mixer Manufacturing Co.

No. 5355—Bulletin on "Biological Test Diets," General Biologicals, Inc.

No. 5356—Automatic oil brooder, Makomb Steel Products Division, Globe American Corp.

No. 5357—Hammer mill, Prater Pulverizer Co.

Send me information on the items marked:

- ☐ No. 5358—Feeders
- ☐ No. 5359—Drag Conveyor
- ☐ No. 5360—Feeder
- ☐ No. 5361—Scale Bulletin
- ☐ No. 5363—Rumen Stimulator
- ☐ No. 5362—Hanging Feeders

Others (list numbers) .....

NAME .....

COMPANY .....

ADDRESS .....

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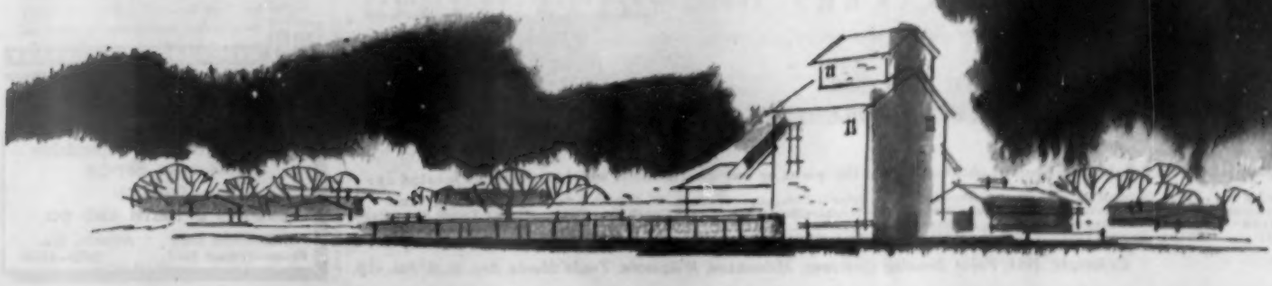
Abbott
WRITE — WIRE — PHONE
ABBOTT LABORATORIES Chemical Sales Division
NORTH CHICAGO, ILLINOIS

'TWAS the night before Christmas when all through the mill
Not a mixer was stirring—all were quite still.
Old style Mixer, weary, forlorn,
Was quietly wishing he'd never been born.
For years he'd been straining and doing his best,
But he just wasn't built to meet the big test.
He thought of the jobs in the year just gone by,
At the future he shuddered and heaved a big sigh.

But just as he wondered why fate was so mean,
St. Nick and his reindeer burst on the scene.
In an instant Old Mixer knew what he'd got—
For the gift in the sleigh bore the logo "Strong-Scott."
"A new Triple Action," Old Mixer cried,
"Now I'll retire—all happy inside.
Look at that beauty, what capacity it's got.
Its high speed action can sure mix a lot.
That I'm slow and expensive, I'll never deny,
On this new Triple Action my boss can rely."
St. Nicholas laughed and turned to his sleigh,
Unloaded his gift and went on his way.

Later that night as Old Mixer slept,
He dreamed of the promise his owner had kept.
His years of good service were finally through,
Triple Action would double production, he knew.
Then through his dreams he heard a faint cry,
From St. Nick and his reindeer high in the sky.
And these are the words that Old Mixer caught:
"A Merry Christmas to all, from the gang at Strong-Scott!"



FUTURE HOG FEED CUSTOMER

(Continued from page 57)

stations. Iowa is developing boar testing stations.

Better Feed Efficiency

It was through progeny testing and selective breeding that breeders in Denmark developed the efficient-growing Danish Landrace hog. Over a period of 28 years, the Danish breeders improved the feed efficiency of pigs from 3.65 lb. of feed per pound of gain to 3.05 lb.

In the U.S., too, there will be more emphasis on feed efficiency. For growing-finishing hogs, nutritionists have reduced the feed required per pound of gain from 5 lb. in 1910 to about 3¼ lb. now. In some experiments, we have got the feed efficiency down to 2.96 lb. of feed per pound of gain on pigs from 25 to 200 lb. However, many producers will require more than 4 lb. of feed per pound of gain.

In the future, we will be getting from growing-finishing hogs a pound of pork on 2½ to 3 lb. of practical rations. This will come through better management and housing and feeding as well as breeding.

With emphasis on feed efficiency, there will be less stress on the daily rate of gain. Depending on the cost of ingredients, it sometimes may be better to use "least-cost" rather than "least-time" rations. The producer depending on economic conditions at the time, will select one of these two methods, or he may feed supplement and grain free choice in growing and finishing hogs.

When it comes to marketing hogs, there will be more sales on a carcass graded basis. Quality meat-type carcasses will bring more returns than the excessively fat carcasses. This has to come!

To head off the decline in per capita pork consumption while consumption of other meats increases, there will be more sales of hogs on a quality basis. Improved breeding will help give us a leaner hog which can be full-fed and still produce a lean carcass—which will be demanded more and more.

As the means of more efficient hog production get more attention, as competition forces more efficiency, the specialization in hog raising will increase. Producers will be specializing not only in production techniques; they will be specializing in profits.

The feed man who is on top of or ahead of the trend toward more specialization and efficiency, will be specializing in well earned profits, too.

But, he must be prepared to remodel his feeds and feeding programs to meet the needs of tomorrow's hog producers.

We have . . .
Ray Ewing
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EITHER CAN DEVELOP RESISTANCE!

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New Bio Pabst B-333 offers high effectiveness against these diseases —Chronic Respiratory (Air Sac) Disease, Blue Comb Disease (Pullet Disease, Mud Fever, Non-Specific Enteritis), and Infectious Sinusitis.

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Start profiting from this great news right now. For high-level feeding make sure your feed is supplemented with **3 to 6 pounds** per ton of new Bio Pabst B-333.

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Animal Feed Department D-12
Milwaukee, Wisconsin

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MADE BY THE MAKERS OF
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FOR THE FINEST IN FEED SUPPLEMENTS

Pabst Feed Supplements are available for prompt shipment from the plant or our distributors' warehouse stocks located at:

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Des Moines 9, Iowa	Portland 9, Oregon	Mankato, Minnesota	Los Angeles 17, California	Atlanta 8, Georgia	Houston 15, Texas
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PORK'S SHARE

(Continued from page 54)

pork and hogs despite only moderately large supplies, USDA points out.

Dislike Fat Cuts

The trend away from pork reflects in considerable measure consumers' growing dislike for the fatter cuts. This has been a gradual change in attitude over a long time. Evidence of it is the prolonged decline in relationship of prices for the fatter cuts of pork to the leaner cuts.

Another cause of loss of demand for pork, USDA says, is a shift of population from pork-eating areas (the South and all farming areas) to beef-eating areas. Still another is increased use of refrigeration in frozen food lockers and home freezers, which has aided demand for beef more than that for pork.

As a rule, USDA says, any decline in preference by consumers shows up most during periods of large supply and low price. For this reason, the attitude toward fat pork doubtless has become a greater price-depressing factor in 1955.

Developments toward producing more meat-type hogs (as noted in the accompanying article) are an adjustment to consumers' likes and dislikes. They will be encouraged as wider price differentials become established. Substantial price differentials on the live animal would be made possible if similar differentials were realized at wholesale and retail.

Trends in demand for pork vs. beef will not be reversed in 1956, USDA says, but neither are they likely to be accentuated.

Meanwhile, improvements in hog production are expected to continue, and alert feed men will be watching the trends.

ELEVATOR PURCHASED

MUSCATINE, IOWA—The McKee Feed & Grain Co. of Muscatine has announced the purchase of the grain elevator at New Boston, Ill., from Larence Morrow of Joy. Located on the Mississippi River, the 50,000-bu. elevator has facilities for loading barges. The new owners plan to add a railroad siding and operate the structure year-around.

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The Real
Santa Claus
One of the blessings of Christmas is that it brings out, in each of us, all that we have kept of the spirit of childhood . . . and fortunate is the man or woman who keeps a strong measure of that spirit.
It is wonderful to see, as a child sees, the mystical . . . the real Santa Claus.
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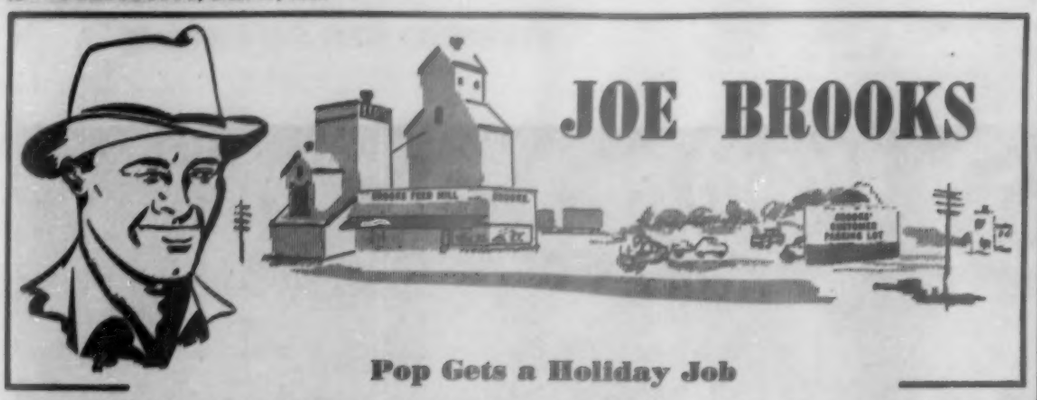

Pop Gets a Holiday Job

A blizzard was blowing sheets of snow against the feed mill and store and trade had slowed considerably, especially in view of the weather man's warning that at least six inches of snow could be expected by nightfall. Joe's employees were busying themselves cleaning up the mill and store, and restocking the islands and wall display shelves.

Milt Peters had gone into Joe's office about a half hour earlier, and now he came out, a smile on his face. In his right hand he held a measuring tape. Milt marched over to an island where Pop Henley, the portly, veteran employee was arranging merchandise. Pop's back was toward Milt, and the latter deftly slipped the tape around Pop's waist and measured it.

"Hey, what the heck is this?" Pop demanded, straightening and grabbing at the tape.

But Milt Peters had let go one end and now whipped the tape out of Pop's reach. "Uh huh!" he stated. "Just as I thought. A 46. You might be able to squeeze into a 44, though, if you shoved that pot into your stomach a little."

Pop, not given to patience where Milt was concerned, glowered, his wide face and bull neck getting a deep red. "Listen, you woman-struck nincompoop," he bellowed. "Don't go tryin' any of your darn shenanigans around me, or I'll toss this package of dog food at your head."

At this moment, Joe Brooks came out of the office. Hearing part of the conversation between Pop and Milt, Joe said, "You fellows remind me of my twins—always scrapping."

"Joe, I think I'll quit!" barked Pop, his tongue nervously playing the Copenhagen quid in his right cheek. "I can't stand this love-sick pipsqueak any longer. I don't have to work under these conditions. I've got my insurance annuity. I've got social security. I've got some money in the bank. I don't have to take this crazy stuff every day. I'm through."

"Now, Pop," placated Joe. "You know we just can't get along without you on a part time basis. All our customers like you. Too bad you and Milt disagree so much, but even preachers don't get along with everyone. Don't expect too much. I need you, Pop. You're a valuable part of our organization."

Pop glowered and fumed, but noticeably cooled down a little. "W-well, I'm only sticking here all this time because of you and the rest of the boys, Joe. If—if only there was some way to separate Milt and me. Couldn't he work way in the other end of the warehouse and me in the store? Then we wouldn't see each other very much."

Cooperative Work

"Cooperative work is the answer to many misunderstandings," Joe stated hopefully. "Milt and I have a wonderful idea for Christmas which involves you, Pop."

"Me!" the elderly employee looked suspiciously at Joe and Milt.

Joe nodded. "Yes. you have the build of a Santa Claus, Pop and the ruddy coloring. Your entire frame,

CDP

CORONET DEFLUORINATED PHOSPHATE

rates *highest* in South Dakota turkey poult diet performance

An approved report of the South Dakota Agricultural Experiment Station (Journal Series No. 312) rates Defluorinated Phosphate B (CDP) in first place among 15 phosphorus supplements tested.

The South Dakota investigators ran five experiments to determine the availability of phosphorus from various sources in feeding Beltsville White turkey poults from day-old to four weeks of age. The phosphorus level of the basal diet was approximately .06 percent, thus requiring the poult to obtain the major portion of his phosphorus requirements from the phosphorus supplement.

Results were measured in weights per poult, bone ash percentages and mortality. Table 5, reproduced below, shows the combined ratings of all 15 phosphorus supplements. Defluorinated phosphate B is CDP.

Rating of the phosphorus supplements used with respect to body weight, bone ash and mortality when dibasic calcium phosphate is set equal to 100 and when these supplements supplied 0.8 percent levels of phosphorus to the poult diet.

Dibasic calcium phosphate U.S.P. XIV	100
Defluorinated phosphate B	101
Monobasic calcium phosphate	97
Defluorinated phosphate C	94
Defluorinated phosphate A	75
Tribasic calcium phosphate N.F. IX	73
Steamed bone meal	75
Beta tricalcium phosphate	60
Commercial dicalcium phosphate No. 2	66
Commercial dicalcium phosphate No. 1	63
Imported rock phosphate A	0
Imported rock phosphate B	0
Colloidal phosphate No. 1	0
Colloidal phosphate No. 2	0
Colloidal phosphate No. 3	0

The South Dakota investigators chose 0.8 percent level of phosphorus because this level was below optimum growth requirement and would provide a more critical assay of the availability of the phosphorus sources.

The South Dakota report summary (in part) reads:

"Poults appear to be more sensitive to source or composition of phosphates than do chicks and this is attributed in part to the difference in growth rates."

"Considerable variation in performance was noted between defluorinated phosphates used and between the dicalcium phosphates which may result from the original source of the material or the processing of the phosphate, or both."

Your request will bring a copy by return mail of the complete South Dakota report covering the above trials.

This Report appeared in Poultry Science Volume XXXII, No. 5

Coronet Phosphate Company

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Main Plant and Office: Waukegan, Illinois

even that magnificent pot belly, would look just wonderful inside a Santa suit. Put some white whiskers on you, Pop, and you'd look pretty much like the real thing. How about it?"

Pop softened visibly. "Well, I've done just about everything under the sun but being a Santa," he said, "although I was best at selling mayonnaise to grocery stores and hotels. What's this Santa business involve anyway?"

Visit Farm Children

By this time the other employees had drawn close and were listening. "Pop, I'd like to dress you up as a Santa, let you take the light delivery truck with the feed mill and store name on it, and drive into the country between now and Christmas visiting farm children."

"The youngsters below six who are not in school," put in Milt. "They are all worked up about Christmas. They aren't in the fun at school preparing for Christmas. They just have to stay home and pester their mothers. You could give them a real thrill by visiting them right on farms. And give them a bag of candy, too."

"And of course," Joe said, "while this isn't a commercial venture, if a farmer insisted on giving you a feed order, you could tell him you'd be glad to give it to me to fill."

"From now until Christmas," Milt said. "You could visit an awful lot of farmers. Maybe just about cover the territory. Joe says this stunt would take the place of our big annual holiday celebration."

"Well, we would eliminate the big feed we've been giving people every year," Joe said. "We would offer free coffee and Christmas music—but that would be all."

"Say, that's a nice idea," Pop said. "I sort of like it. So Milt got this program up, eh? I didn't think he had it in him. A feller runs into sur-

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KELLY DUPLEX
twin Molasses Mixer

The mixing chamber, which consists of 2 rotary shafts and 36 individual paddles, is a model of blending efficiency.

Mixes quickly, evenly, thoroughly without balling or lumping . . . practically eliminates all cleaning!

With a Kelly Duplex Twin Molasses Mixer in your mill, there's big volume and big profits ahead for you in either private brand or custom mixed sweet feeds. Features include a complete, easy-to-adjust control system that lets one man set and maintain the most exacting molasses-feed proportions with absolute accuracy . . . a twin paddle rotor unexcelled for fast, thorough, even mixing—and self-cleaning characteristics . . . a conveyor that swivels to any position or is completely demountable . . . and many, many others.

Before you buy, you owe it to yourself to compare this outstanding machine point for point (features, equipment, construction and cost) with all other makes . . . and see for yourself why a Kelly Duplex is your one best buy. The card will bring you full details.

Make your own "point for point" comparison!
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Molasses Meter records in pounds, gives unexcelled accuracy, has turn-back attachment. 3-way valve (at left) can be conveniently hooked up for retail bulk molasses sales.

Variable Speed Control on the 1 H.P. screw conveyor gives you positive, finger-tip control of feed flow into the mixer. Conveyor can be removed from mixer and used elsewhere, if so desired.

Molasses Pump is powered by 3 H.P. motor. Special strainer removes foreign matter before it can enter pump. Adjustable by-pass valve eliminates need for return pipe to molasses supply.

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Yes, I'm interested in the KELLY DUPLEX machinery checked at the right. Please send me full information on these machines without any obligation.

- ☐ Twin Molasses Mixer
- ☐ Model "B" Hammermill
- ☐ Vertical Screw Elevator
- ☐ Corn Cutter and Grader
- ☐ Corn Sheller with Blowers
- ☐ Pitless Corn Sheller
- ☐ Regular Corn Sheller
- ☐ Magnetic Separator
- ☐ Cob Crusher
- ☐ Electric Truck Hoist
- ☐ Vertical Feed Mixer
- ☐ Model "S" Hammermill
- ☐ Forced Air Cartender
- ☐ Chain Drag
- ☐ Corn Cracker-Regulator
- ☐ Grain Blower
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AGRI-TECH ALFALFA PRODUCTS

INQUIRIES APPRECIATED

prises every day. All right, Joe, I'll do my best."

"I know you will, Pop," declared Joe smilingly. "You're just the fellow for the job of building good will and taking the spirit of Christmas to the little farm kiddies. We'll get the suit for you tomorrow and then you can start out anytime you want. Mary will buy and bag the candy for your trips."

A mischievous twinkle came into Milt's blue eyes. "I would suggest you call on all farm families, except places where there are widows," he said. "I think you should keep away from—"

"Why, you snippy little squirt!" Pop interrupted. "I knew this was too good to last. I knew you couldn't keep from mentioning women. Believe me, it will be a pleasure to be a Santa for a while, visiting farmers—just to be away from you. And I hope you go on a Florida vacation for the rest of the winter, too.

Borrowing from Farm Credit Units Up 9%

WASHINGTON — Farmer-members of the 498 production credit associations borrowed $1.1 billion from these associations in the first 10 months of 1955, up 9% from the same period of 1954, the Farm Credit Administration has announced.

During this same period farmers' cash repayments on their loans were $738 million compared to $701 million for the first 10 months of 1954.

The size of loans was somewhat larger with an average loan outstanding on Oct. 31, 1955, of $3,485, or $295 higher than on Oct. 31, 1954.

Production credit associations in all farm credit districts showed increased loan volume for the first 10 months of 1955, ranging from 2.2% to 16.2%. Largest increases were in the Wichita, Omaha, Spokane, Louisville and St. Louis districts.

Production credit associations are local credit cooperatives run by and for farmers who obtain loans for operating purposes through them. These associations lend funds supplied by investors in all parts of the U.S. through the facilities of the federal intermediate credit banks. These banks discount farmers' notes for the production credit associations and other lenders. The banks sell debentures—short-term bonds—secured in large part by these notes to investors. The debentures are not guaranteed by the government in any way.

Cattlemen's Convention Planned for Jan. 8-11

BATON ROUGE, LA.—More than 1,100 cattlemen in the U.S. have made reservations for the 59th annual meeting of the American National Cattlemen's Assn. to be held in New Orleans, Jan. 8-11, according to A. P. Parham, animal husbandman with the Louisiana State University Agricultural Extension Service and secretary of the Louisiana Cattlemen's Assn.

Preliminary program schedules show the cattlemen will give special emphasis to beef promotion. Other spotlighted topics will be feeding, marketing and public relations.

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"Put your house in order" for peak season business. Make sure your equipment is modern, efficient and economical and that the capacity is sufficient to handle *all* your requirements. Let Blue Streak break the bottle-necks and shoulder the responsibility of giving your customers the finest and fastest grinding, mixing, cob crushing, corn cutting and material conveying. Talk it over with a Prater sales engineer. He can help you step up your service, sales, and profits. Do it now!

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For making better feeds

LIME CREST

TRACE-MINERAL PRE-MIXES

(PATENT APPLIED FOR)

Behind all Lime Crest Trace-Mineral Pre-Mixes stands a record of providing the best possible products with true economy and convenience for the feed manufacturer. Lime Crest pioneered in the use of compatible ingredients in trace-mineral pre-mixes. Its exclusive blending process assures uniformity of distribution of the vital trace elements.

Important, too, is Lime Crest leadership in trace mineral research . . . research that produced a better blending process and led to the use of trace mineral compounds that are more compatible with fat-soluble vitamins.

Because quality control is a fetish at Lime Crest, you can depend on accuracy and uniformity of all our formulations. Lime Crest's facilities and skills are your assurance of receiving the most advanced products to help you produce better feeds.

Just off the Press:

Write for a free reprint of the chapter on Energy Values of Feedstuffs for Poultry from the 1955 edition of The Scientific Feeding of Chickens by Dr. Harry W. Titus.

Lime Crest BRAND

LIME CREST PRODUCTS

are made by Limestone Products Corporation of America

Dept. A-12 Newton, N.J.

World's Largest Producer of Crystalline Calcite Products

Makers of LIME CREST CALCITE CRYSTALS—the 3-in-1 calcium supplement for poultry; LITTER-KEPE—the ideal conditioner for poultry litter; Non-Skid BARN CALCITE—for safe, non-skid barn floors.

In Canada: The Ash Chemical Company, 410 St. Nicholas St., Montreal 1, P. Q.

GETTING ACQUAINTED—A dinner meeting to acquaint veterinarians in the area with the operations of the W. B. Johnston Grain Co. feed business was held in Enid, Okla., recently. Twenty-six veterinary doctors from the eight-county Enid area were in attendance. Joe Meibergen, manager of the Johnston feed operations explained the purpose of the gathering was to allow the feed firm to get better acquainted with the doctors; to get a better understanding of their problem, to familiarize them with the feed situation and to assist in a better relationship between feed manufacturers and veterinarians. Mr. Meibergen is shown above second from the right. His special guests at the dinner were, left to right, Dr. Morris Erdheim, Dawe's Laboratories, Inc., Chicago; Dr. A. L. Malle, veterinary pathology professor, Oklahoma A&M College, Stillwater, and Dr. J. Wiley Wolfe, director of clinics, Oklahoma A&M veterinary hospital. The principal speaker at the event was Dr. Erdheim. In addition to speaking on the better cooperation between veterinarians and feed men, Dr. Erdheim showed slides and explained work that was being done in the field of rumen nutrition.

YOUR CUSTOMERS REPEAT ON EGGSHELL BRAND
---THEIR HENS LIKE IT SO MUCH !

Climbing sales prove the popularity of the poultry shell that's "Aged in the waters of Mobile Bay." It's 100% Pure Reef Oyster Shell—a soft, digestible calcium food.

YOU CAN GUARANTEE EGGSHELL BRAND WITH CONFIDENCE AND WE'LL BACK YOU UP!

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OVER 27 YEARS OF SERVICE

SOUTHERN OYSTER SHELL MILLING CORPORATION
Mobile, Alabama

FOR BETTER, FASTER-SELLING FEEDS

Boost your FEED VALUES with . . .

Tamms

OXIDES and MINERAL FEED BLENDS

Build up demand for your feed mixes by adding the blood "builder-upper" minerals—iron and copper! Tamms is a pioneer in high grade oxides of iron—now also offers manufacturers of feed a unique blend of iron and copper sulphate.

RED OXIDE OF IRON
Growing and breeding animals, as well as poultry, need adequate supplies of iron in their daily diet. This high quality Red Oxide has an extremely high iron potency.

TAMMS YELLOW OXIDE AND BROWN OXIDE
Tamms Iron Oxides are free of injurious impurities such as lead, fluorine and arsenic—contain no harmful ingredients. Certificate of analysis furnished upon request for all Tamms Oxides.

IRON-COP MINERAL BLEND
First mineral combination of its kind offered to feed manufacturers. By blending Tamms Red Oxide of Iron with high-grade copper sulphate in proper nutritional proportions, the blood-building, health-promoting function of the iron is greatly increased.

Iron-Cop is thoroughly mixed and milled to assure maximum utilization—eliminates need of running both of these essential minerals through a feed mixer; avoids danger of copper elements forming pockets in the feed.

MINERAL FEED BLACK
For use in coloring rock phosphate and soybean meal. An economical replacement for charcoal and carbon black.

Attractive prices on pool cars, carload lots and smaller bulk orders.

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Phones—Central 1-5541
Chestnut 1-3952 & 3

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209 Grain & Flour Exchange
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AND 44 OTHER FEEDS

CONVENTION CALENDAR

Jan. 6-7—Kansas Seed Dealers Assn.; Hotel Broadview, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

Jan. 9-10—Kansas State Formula Feed Conference; Kansas State College, Manhattan; chmn., Dr. F. W. Atkeson, Kansas State College, Manhattan, Kansas.

Jan. 15-17—New Mexico Grain & Feed Dealers Assn.; Hilton Hotel, Albuquerque; sec., H. B. Honing, P.O. Box 616, Albuquerque, N.M.

Jan. 16-17—Northwest Retail Feed Assn.; Hotel Nicollet, Minneapolis, Minn.; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 23—Nevada Feed Conference; Univ. of Nev., Reno; chmn., Dr. J. F. Kidwell, U. of Nev., Reno, Nev.

Jan. 22-24—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade, Indianapolis, Ind.

Jan. 23-25—North Dakota Poultry Industries Convention; Elks Club, Fargo; chmn., Irving J. Mork, North Dakota Agricultural College, Fargo, N.D.

Jan. 23-25 — Southeastern Poultry and Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., J. Paul Williams, 615 E. Franklin St., Richmond, Va.

Jan. 26-28—American Dehydrators Assn.; Hotel del Coronado, Coronado, Cal.; exec. V. P., Joseph Chrisman, Dwight Bldg., Kansas City, Mo.

Feb. 3-4—Minnesota Turkey Growers Assn.; Radisson Hotel, Minneapolis; sec., Alfred E. Eisenmenger, 2200 University Ave., St. Paul 14, Minn.

Feb. 7-8 — Hoosier Turkey Trot; Lafayette, Ind.; chmn., David D. Jackson, Ind. Agricultural Extension Service, Lafayette, Ind.

Feb. 7-8—Utah Nutrition and Production Conference; Utah State Agricultural College, Logan; sec., Dr. Lawrence Morris, Animal Husbandry Dept., Brigham Young Univ., Provo, Utah.

Feb. 9-10—Oregon Animal Industry Conference; Oregon State College, Corvallis; chmn., Dr. Don Mishler, Crown Mills, 733 S.W. Oak, Portland, Ore.

Feb. 12-14—Wyoming Grain, Feed and Seed Dealers Assn.; Laramie, Wyo.; sec., Everett L. Berry, Box 118, Sheridan, Wyo.

Feb. 12-14—Grain Processing Machinery Manufacturers Assn.; Edgewater Beach Hotel, Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

Feb. 17 — Washington State Feed Assn.; Chinook Hotel, Yakima; sec., John G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Feb. 19-21—Colorado Grain, Mill-

Distributed in Minnesota, North and South Dakota and Western Wisconsin by:

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6460 Wayzata Blvd., Minneapolis 16, Minn.
Phone: GRichard 5-6605

Merry Christmas
and a
Happy New Year

UBIKO
Life Guard
FEEDS

THE UBIKO MILLING COMPANY
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It's Results that Count!

Marcol B-75

Stops Dust . . . Waste

- Liquid Fat Marcol B-75 gives extra energy for fast growing.
- Animals go for feed with Marcol B-75 Blended in . . . it tastes better . . . more palatable.
- Marcol B-75 pours, handles and mixes like water.
- Marcol B-75 has Super Stability . . . 5 to 10 times more stable than other oils and fats.
- Marcol B-75 blends easily . . . no extra labor or equipment costs.
- Marcol B-75 contains Vitamin E . . . an added extra.

Write for a Free Sample of Marcol B-75

MARCO CHEMICAL COMPANY
P. O. BOX 6 ★ FORT WORTH, TEXAS

The Thrifty Buy!

MEAT PROTEINS
BETTER 5 WAYS

1/ HIGH QUALITY PROTEINS 2/ EXTRA FATTY ACIDS
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5/ and UNIDENTIFIED GROWTH FACTORS

ALL AT NO EXTRA COST!

Why not sell your customers feeds with higher feeding efficiency, the kind every good feeder wants . . . by using MEAT SCRAPS as the main source of protein? They cost no more per unit than vegetable proteins and at the same time supply those *extra factors* mentioned above. Besides providing the best balance of amino acids, MEAT SCRAPS furnish 32 times the Calcium, 6 times the Phosphorus, twice the Riboflavin and Niacin, and 16 times the Fat found in vegetable protein supplements. That's why they are *the Thrifty Buy.*

For Poultry and Hog Feeds MEAT PROTEINS are unexcelled. They provide that "Extra Something." Make better feeds for the profit-wise feeders by using MEAT SCRAPS. Be THRIFTY!

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MODEL 2229 — Designed for overhead suspension. One man can bag, weigh and checkweigh in one simple operation. Has just two controls—easy to operate. Save labor costs and eliminate over - weights with an Exact Weight Sacking Scale.

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Aubrey Feed Mills' No. 4 mill is now completed. This brand new mill, in addition to our three other Falls City mills, assures the great Southeast prompt deliveries of Red A high quality feeds.

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LOUISVILLE 4, KY.

Serving the Great Southeast

● WE ALSO OFFER COMPLETE MIXED CAR SERVICE • GRAIN ●

ing and Feed Dealers Assn.; Shirley-Savoy Hotel, Denver; sec., R. B. Kelley, 605 Bining Exchange Bldg., Denver, Colo.

Feb. 19-21 — Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo; sec., L. E. Foisom, 222 Chatham Rd., Columbus 14, Ohio.

Feb. 22—Mutual Millers and Feed Dealers Assn.; Hotel Statler, Buffalo, N.Y.; sec., Mrs. G. A. Bentley, 41 Chautauqua Ave., Jamestown, N.Y.

Feb. 22-23 — Virginia Polytechnic Inst. Nutrition School; Hotel Roanoke, Roanoke, Va.; chmn., Paul M. Reaves, V. P. I., Blacksburg, Va.

Feb. 27-28 — Midwest Feed Mfrs. Assn.; Hotel Muehlebach, Kansas City; exec. V. P., Lloyd S. Larson, 20 West Ninth Street Bldg., Kansas City, Mo.

March 7 — Distillers Feed Conference; Sheraton-Gibson Hotel, Cincinnati, Ohio; sec., Lawrence Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

March 15-16 — Oregon Feed and Seed Dealers Assn.; Multnomah Hotel, Portland; sec., Leon Jackson, 809 Lewis Bldg., Portland 4, Ore.

March 18-19—Quad-State Convention sponsored by Sioux City Grain, Feed & Seed Assn.; Martin Hotel, Sioux City, Iowa; sec., N. G. Nichols, 901 Missouri River Road, Sioux City, Iowa.

March 18-23—Grain Elevator and Processing Superintendents; Muehlebach Hotel, Kansas City, Mo.; sec., Dean M. Clark, "Grain," Board of Trade, Chicago 4, Ill.

March 22-23—Maryland Nutrition Conference for Feed Mfrs.; Shoreham Hotel, Washington, D.C.; chmn., Dr. G. L. Romoser, U. of Md., College Park, Md.

April 3—Purdue Egg Day; Lafayette, Ind.; chmn., David D. Jackson, Ind. Agricultural Extension Service, Lafayette, Ind.

April 5—Texas Feed Manufacturers, Hotel Texas, Fort Worth; sec., Monroe U. May, P.O. Box 6666, Dallas 19, Texas.

April 6-7 — Texas Grain & Feed Dealers Assn., Hotel Texas, Fort Worth; sec., Ben Ferguson, 614 Meacham Bldg., Fort Worth 2, Tex.

April 9-11—American Assn. of Feed Microscopists; Deming Hotel, Terre Haute, Ind.; sec., Robert C. Wornick, Chas. Pfizer & Co., Terre Haute, Ind.

April 12-14—California Hay, Grain & Feed Dealers Assn.; Ambassador Hotel, Los Angeles; sec., John F. Gilmore, 1400 Tenth St., Sacramento 14, Cal.

April 16-17—Nebraska Grain and Feed Dealers Assn.; Hotel Cornhusker, Lincoln; sec., Howard W. Elm, 917 Trust Bldg., Lincoln, Neb.

May 3-5 — Kansas Grain & Feed Dealers Assn.; Kansan Hotel, Topeka; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 21-22 — National Cottonseed Products Association; Statler-Hilton Hotel, Dallas; sec., John F. Moloney, 19 S. Cleveland St., Memphis, Tenn.

May 23-25—American Feed Manufacturers Assn.; Morrison Hotel, Chicago; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4, Ill.

June 4-5 — Eastern Federation of Feed Merchants; Hotel Commodore, New York; sec., Howard J. Benson, Eastern Federation of Feed Merchants, Sherburne, N.Y.

June 4-5—Georgia Feed & Poultry Conference; Dinkler Plaza Hotel, Atlanta; sec., Will L. Kinard, 208 William-Oliver Bldg., Atlanta 3, Ga.

June 6-9 — Grain Processing Machinery Manufacturers Assn.; French Lick Springs Hotel, French Lick, Indiana; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

June 11-12 — Montana Nutrition Conference; Montana State College, Bozeman; chmn., O. O. Thomas, Montana State College Agricultural Experiment Station, Bozeman, Mont.

June 15—Pacific Northwest Grain Dealers Assn.; Davenport Hotel, Spokane, Wash.; sec., Pete Stalicop, 418 Peyton Bldg., Spokane, Wash.

June 17-19 — Indiana Grain and Feed Dealers Assn.; Purdue Union Bldg., Purdue University, Lafayette, Ind.; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 28-30—Association of Southern Feed and Fertilizer Control Officials; Hotel Roanoke, Roanoke, Va.; sec., Bruce Poundstone, U. of Ky. Agricultural Experiment Station, Lexington 29, Ky.

Oct. 4-5—Texas Nutrition Conference; Texas A&M, College Station, Texas; chmn., J. R. Couch, Dept. of Poultry Husbandry, Texas Agricultural & Mechanical College, College Station, Texas.

Oct. 17-18—Assn. of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., L. E. Bopst, U. of Md., College Park, Md.

NEFF & FRY BINS ARE DRY INSIDE

When we erected 17 bins for Johns-Mansville Corporation at Fort Worth, one specification was that the bins must show no signs of leakage or dampness after testing with direct impact of water through a standard fire hose nozzle. The bins are used for handling and storing slate granules of various colors for roof coverings.

"The photograph indicates the water resistanee of your bin which was tested in a most rigorous manner," wrote L. A. Benton, Johns-Mansville Project Engineer. "The installation has been very satisfactory."

No matter what kind of flowable bulk materials you use, you'll exercise good judgment by selecting our bins. Better ask for our folder, "Bins With the Strength of Pillars."

THE NEFF & FRY CO. • 220 Elm St. • Camden, Ohio

SUPER-CONCRETE STAVE STORAGE BINS

• • • The Berlin (Maryland) Milling Co. feeds produced added profit when formulated according to the new Du Pont Methionine-energy concept.

Feed costs cut 15% on 267,298 broilers

Another Example of the Effectiveness of Du Pont's New **Methionine-Energy Concept**

	Production Records on March 1955 Feed	Production Records on October 1955 Feed
Number of broilers sold	237,604	267,298
Age when sold	75 days	76 days
Per cent livability	92.2%	97.2%
Average weight	3.43 lbs.	3.51 lbs.
Pounds of feed per pound of meat	3.04	2.67
Pounds of meat per 100 pounds of feed	32.88	37.42

Berlin Milling Co. has the proof any feed man or broiler feeder would be glad to have. They know a higher-energy feed with added Methionine pays off!

They marketed 237,604 broilers earlier in the year and 267,298 recently. Conditions for both lots were the same except for *one difference*. The 267,298 birds were fed a ration that had been formulated according to the new Du Pont Methionine-energy concept . . . *a ration containing increased energy balanced with the proper amount of added Methionine.*

The chart, left, shows the results. Because of the improved formulation, more meat was produced from every 100 pounds of feed. This saving resulted in a 15% reduction in feed costs, even after equalizing the difference in ingredient costs.

Many feed manufacturers are taking advantage of recent research showing how to balance high-energy broiler diets with sufficient "effective" protein. And like Berlin Milling, many are making excellent feeds even more productive and profitable for their growers . . . by adding Methionine to supplement the deficient natural protein.

Are you sure your broiler feed contains enough Methionine to give you lowest possible cost per pound of meat? Talk it over with your supplier.

E. I. DU PONT DE NEMOURS & COMPANY (INC.)
Grasselli Chemicals Department
Animal Industry & Nutrition Sec., Wilmington, Delaware
Du Pont Company of Canada Limited, 80 Richmond St. West, Toronto, Can.

DU PONT REG. U.S. PAT. OFF. **Methionine**

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

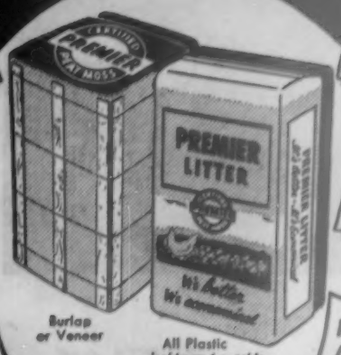
☆ ☆ ☆

This advertisement will appear in the December issue of

BROILER GROWING

PREMIER PEAT LITTER

absorbs as much as 4 times more than other material



ABSORBS QUICKER

FINAL COST IS LESS

SAVES WORK

RE-SELL AS FERTILIZER

LASTS LONGER

NATIONALLY ADVERTISED

Burlap or Veneer

All Plastic *inside and outside*

Better Packages!

Write, Wire or Phone for Details

PREMIER PEAT MOSS CORP., 535 FIFTH AVE., NEW YORK 17, N. Y.

Profitable for Chicks, Customers and for You!

CHECKERBOARD ELEVATOR CO.

Buyers and Sellers
of
MILLFEEDS, GRAINS AND GRAIN PRODUCTS

KANSAS CITY ST. LOUIS MINNEAPOLIS

Mitchell, Hutchins & Co.

. . . can help make your business operations safer by protecting you against market fluctuations and inventory losses.

HEDGE your soybeans, soybean oil and soybean oil meal in the futures market. It's the inexpensive way to take the risk out of your ingredients.

Call, wire or write us today for information.

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RINGING THE cash register

MERCHANDISING HINTS FOR THE FEED RETAILER

Reverse Psychology

The use of "reverse psychology" by the feed dealer in his ads or regular letter to customers can sometimes be effective in putting over a certain point he is trying to make. An example is that of Glen E. Young of the Brookhurst Mill, Anaheim, Cal., in a recent newsletter to his poultrymen-customers. Mr. Young started off by saying that "raising poor pullets is not an art or science, it is simply a way of life for some who are in the chicken business for one or more of the following reasons: (1) To drain off certain monetary assets or cut their income tax, (2) to spend their leisure time or (3) for the feeling of independence. Mr. Young then adds that to raise poor pullets it is necessary to buy the cheapest chicks possible, have them delivered before the brooder is heated, let vaccination go until it looks like they need it, throw them some grain when convenient and don't bother with laying cages. After Mr. Young listed all the "don'ts" for successful pullet raising, he devoted a page of his newsletter to pointers on raising good pullets. He set up a contrast for raising poor pullets by showing the desirability of having a good breed of chicks, proper management practices, adequate bird space and ways of avoiding picking. The poultryman receiving such a newsletter from his feed dealer will find it amusing and nearly always will read it through, including the section devoted to raising a healthy, profitable flock.

Free Cards

A free box of handsome Christmas cards is given by one feed dealer to all his customers, starting in November of each year. A reminder of this practice is sent out in the form of a direct mail letter to the dealer's customer list.

First Years Toughest

The biggest reason for business failure is lack of experience on the part of management, according to Al Potter, executive manager of the Chicago Association of Credit Men. Nearly all failures occur in the first five years a firm is in business, he states. Business failures, listed according to type, are led by food and liquor stores, followed by eating and drinking places, apparel and accessories, furniture and home furnishings, automobile firms, lumber, building materials and hardware. Business mortality, however, is presently far below the average of the failure rate just prior to World War II.

Special Discounts

One feed dealer who has Santa Claus present in his store for several hours every Saturday prior to Christmas, offers special discounts good only during the period in which the jolly old fellow is present. The items are not advertised but the fact that special discounts will be allowed is widely broadcast. The result is that many prospects are attracted to the store, not only so their children can visit Santa but to take advantage of the special discounts.

Feed Efficiency

Feed dealers will find it advantageous to point out to their customers that feed efficiency ties in with good farm management. University of Wisconsin economists who made a study of 637 farmers who belong to management associations say that this group actually increased its labor income during 1954, compared with 1953. This was accomplished during a period of declining farm income. One of the most important things to watch in boosting farm income is feed efficiency, according to the economists. Farmers who had a return of $211 for every $100 of feed costs had an annual average income of $4,098, compared with $2,535 for those who got back only $157 for every $100 worth of feed used. Labor income in this case refers to the net farm income minus annual interest charge on the money the farmer has invested in his farm livestock.

Tax Service

The information about a Colorado feed firm which provides an income tax service as a business stimulant appeared in this department in the Nov. 26 issue of Feedstuffs. The article stated that an income tax specialist is available for consultation with feed customers on the first Saturday of each month from 1 p.m. to 5 p.m. The information incorrectly stated that it was the Farr Company which has this income tax service.

NICHOLS

FIRST on every profit-making count

FIRST in HEALTH from pullet chick to laying house . . . top others by four or more laying pullets per 100 started, have far better livability and resistance to disease and temperature extremes in the house.

FIRST in HATCHING EGG PRODUCTION by 10 to 20 eggs per hen, at a feed savings of 6c or more per dozen.

FIRST in HATCHABILITY —80 to 84% of all eggs set result in salable broiler chicks! They all but grade themselves, are yet to be topped in vitality from pipped egg to finished broiler.

FIRST in COMBINABILITY. There's a big bonus of extra health, feed efficiency, growth, and quality for the processor when broiler chicks sired by Vantress or Indian River males are mothered by Nichols No. 12s, the first and only nationally accepted females developed specifically for cross breeding.

FIRST in GRADING QUALITY and YIELD — far better health means better fleshing and color, gives processors a higher percent of A grades, adds to shelf life. Meat yield tops others by minimum of ½ percent.

Positive identification of the best in broiler stock comes when both parents are identified. Folks with the biggest stake in the broiler industry say

Vantress-Nichols
Indian River-Nichols
rate FIRST IN PROFITS

Available at hatcheries in every broiler area.

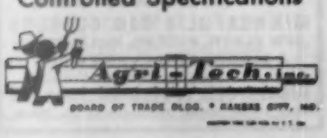
NICHOLS
POULTRY FARM, INC.
Kingston, N. H.

SILMO *for Vitamin Oils.... for Dry Vitamin Supplements*

NEW ELECTRIC DE-ICER

Automatically keeps 15-inch hole in ice to 50° below zero. Thermostat control, 600 watts, average cost only 2 cents a day. Buy only one Rhinehart de-icer in your lifetime — all parts are replaceable for easy servicing. SEND CHECK OR MONEY ORDER
MONEY-BACK GUARANTEE—Only **$14.95**
RHINEHART CO., 1127 Polk St., Ft. Wayne, Ind.

Technical Agricultural Products With Controlled Specifications



Germany to Use $5 Million ICA Fund For Grain Needs

WASHINGTON—The International Cooperation Administration has issued a purchase authorization to the government of Western Germany for the procurement of corn, oats, barley and grain sorghums.

The authorization is for $5 million and is made under Section 492 of the Mutual Security Act. This provision is somewhat similar to Public Law 480 since it provides for sales in foreign currency.

The contracting period is from Dec. 15, 1955, to March 31, 1956, with the terminal delivery date not later than May 31, 1956. The selection of the grain, either corn, oats, barley or sorghums, is at the choice of the buyer. The grain must be of U.S. origin.

Made "Regular"

MINNEAPOLIS—Interstate Elevator No. 1, with a capacity of 600,000 bu., was made "regular" Dec. 8 under rules of the Minneapolis Grain Exchange and the Minnesota Railroad and Warehouse Commission.

HEYWOOD & RABB, INC.

JOBBERS • BROKERS • CARRIERS

CONTACT US WITH YOUR OFFERINGS ON ALL GRAINS AND GRAIN PRODUCTS FOR DELIVERY INTO THE SOUTHEAST — TRUCK OR RAIL

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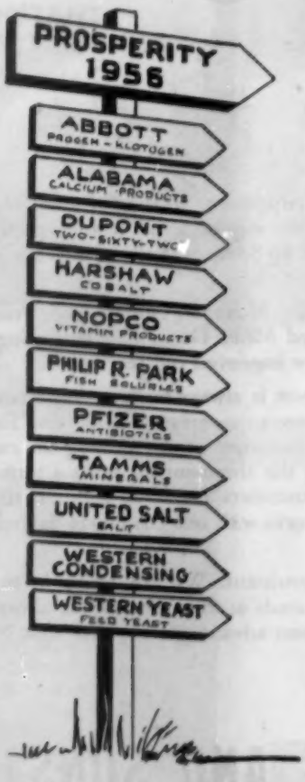
A LIVE YEAST CULTURE — for 4-footed animals and poultry. Supplies all known B Complex Vitamins including B_{12} plus other nutritional factors. Easy to add to any formula. *Write or Wire for sample and prices.*

ZELLERS' LABORATORIES READING, PA.

BUY and SELL through WANT ADS

Pless & Sheahan's Best Wishes for the New Year



You will find it pays to follow the Pless & Sheahan road in the new year ahead. Along this route you will find the best in service from our Memphis warehouse stocks, and the finest of quality feed products from the famous brands of manufacturers listed at the left. The combined efforts of our staff and that of our distinguished suppliers are ever at the service of the growing feed industry of the Mid-South to help along the path to prosperity.

Pless & Sheahan
MEMPHIS, TENNESSEE

STEAMED
FEEDING ROLLED OATS
• PULVERIZED WHITE OATS
• FEEDING OAT FLOUR
• FEEDING OAT MEAL
• HY-PROTEIN OAT FEED (11%)
• REGROUND OAT MILL BY-PRODUCT (3½%)
• FEEDING STEEL-CUT OR WHOLE OAT GROATS
SHIPPED IN STRAIGHT OR MIXED CARS; FOR LATEST QUOTATIONS WRITE, WIRE TELETYPE MP 545 OR PHONE MAIN 4341
General Mills, Inc.
PURITY OATS OPERATION
BOX 1188, 1201 JACKSON ST. N. E.
MINNEAPOLIS 1, MINN.

IMPROVED FEEDS

(Continued from page 52)

croflora of the gut to the extent that the normal bacterial synthesis of vitamin K has been markedly reduced. Vitamin K prophylaxis has been of definite help in minimizing or eliminating this hemorrhagic state. Certain basic manufacturers of a vitamin K supplement have offered means of assay for determining their proprietary form of vitamin K.

However, this is not the analysts' solution to the assay of the vitamin K content of the general run of feeds. Numerous methods of chemical assay have been proposed, all of which have their pitfalls. At the present time the most reliable measure of the vitamin K activity of a feed or a concentrate is the chick assay. Since this is another biological assay, it tends to be subject to greater error and more expensive than other methods. Its compensating feature is that it affords a more true biological evaluation of vitamin K activity than chemical methods.

Factor Availability

In addition to being confronted with many new problems in the assay of new as well as old feed additives, the analyst is frequently faced with problems of "factor availability" or is expected to be able to predict as to what combinations of factors from an analytical standpoint will produce the best results. Two very important feed entities or combinations are under rather intensive investigation at the present time. One of these is phosphorus. The analyst may be able to determine the exact phosphorus content of a mineral premix or a feed, but he can not vouch for its availability to the animal or fowl. The answer to this question depends on animal and chick feeding experiments.

In a similar manner the analyst can determine fairly accurately the essential and non-essential amino acid content of a protein or a feed; but he cannot guarantee that the combination, whether in balance or not, will produce the desired results. As with phosphorus availability, the answer remains with the animal per se; in other words, biological protein evaluations must be run in vivo not in the analytical laboratory. It is true that the analyst can be an extremely helpful guide, but he can not give you the biological answer.

Thus far, I have attempted to give some of the highlights of the problems confronting the analyst in respect to feed analysis. This has not been a detailed discussion of each problem nor have I covered every feed adjunct. However, I trust that this brief resume has served the purpose of affording a better appreciation of the analyst's position in serving the feed industry.

Oregon Plans Animal Industry Conference

CORVALLIS, ORE. — Plans are being made for the Oregon Animal Industry Conference which will be held at Oregon State College Feb. 9-10.

Dr. Don Mishler, Crown Mills, Portland, is chairman of the event.

FIRE HITS MILL

DENMARK, S.C.—The Guess Feed Milling Co.'s mill and warehouse here were damaged by fire recently with the loss estimated at $5,000 to $6,000 by James B. Guess, Jr., president of the firm. The concrete block warehouse contained a large quantity of corn, much of which was burned. Much of the machinery and equipment in the mill was also damaged.

MAKING shipments to the formula feed manufacturer of what he wants, just the way he wants it and exactly *when* he wants it . . . that is the aim of Spencer Kellogg service in protein supplements.

Here you see Harold Wright, Traffic Manager, talking with Fran Davis, Assistant Manager of the Oilseed Meals Division, about a suggestion that will help a feed man secure improved rail service.

Unusual? Not at all! A traffic expert is always busy on important work for Spencer Kellogg meal customers . . . arranging for cars for instance; getting the type of car the customer wants; getting the car out of the mill on time and expediting the shipment. It takes a traffic man to help fit shipping schedules to customers' needs. In addition, the Spencer Kellogg Traffic Department works with our customers in their other relations with the railroads.

Spencer Kellogg good service is consistent. We are active in the market at all times, buying the best seeds as they are offered, always able to furnish uniform meals at the most advantageous prices that go with the assurance of top quality.

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Jack Flammer Henry G. Turner

Committees Named for California Convention

SACRAMENTO, CAL. — Jack Flammer, Flammer Grain Co., Los Angeles, general chairman of the 1956 convention of the California Hay, Grain & Feed Dealers Assn., has named the following special committee chairmen:

Gail McDowell, Western Consumers Feed Co., finance; Walter Blasingham, Pillsbury Mills, Inc., program; Arnold Wagner, General Mills, Inc., housing; Thomas H. Jones, Poultrymen's Cooperative Assn. of Southern California, and Gladys O'Dell, Pillsbury Mills, Inc., banquet; Richard Webster, Balfour-Guthrie & Co., Ltd., and John Campbell, Campbell Grain Co., golf; Forrest Corzine, Charles T. Taylor & Co., and Charles Sander, Western Consumers Feed Co., bowling; William Fritz, Jr., W. C. Fritz & Son, publicity.

The convention will be held at the Ambassador Hotel in Los Angeles April 12-14.

Recently announced by the association was the appointment of Henry G. Turner to the post of vice president. Mr. Turner is the third member of his family to serve as an official of the California group.

His father, Arlo V. Turner, was the first secretary of CHG&FDA in 1924-25 and served as president in 1933. His grandfather, Henry G. Turner, was the association's first president in the years 1924-25.

The new vice president graduated from the University of California and is now a vice president of the Grange Co. at Modesto.

BROILERS NEED ROOM

LAFAYETTE, IND.—Poultry specialists at Purdue University say that 1 sq. ft. of floor space should be provided for each bird in the broiler house. In tests, birds with 1 sq. ft. of space showed faster growth, better livability and a higher percentage of grade A broilers than when ¾ or ½ sq. ft. per bird was provided.

Farmers' Electrical Purchases Estimated

WASHINGTON — Purchases of electric appliances and equipment by farmers during the period 1956-75 are estimated at $24 billion, or an average of $5,300 per farm, according to the Department of Agriculture. The estimates are from a rural market study that the Rural Electrification Administration has just completed. The study contains estimates for the total number of U.S. farms, whether served by REA borrowers or other utilities.

During the next five years the purchases are expected to amount to about $5.3 billion and during the next 10 years about $11.3 billion. This would be an average expenditure per farm of about $1,100 for the 1956-1960 period and approximately $1,300 for the 1961-1965 period.

Expenditures for 27 items are estimated in the study. In the farm equipment field, milk coolers and water pumps will be the best sellers with expenditures of $124 million for each of these expected within the next five years. Other items expected to figure prominently in the plans of farmers are milking machines, $77 million; livestock watering equipment, $26 million; feed grinders, $19 million; chick brooders, $16 million, and dairy water heaters, $10 million.

Light and house wiring will be the best sellers. For these farmers are expected to spend a little over $1 billion in the next five years. Refrigerators, television receivers, washing machines, plumbing and related fixtures, home freezers and electric ranges figure next in line, in that order.

The top markets by states are expected to be California, Tennessee, Iowa, Ohio, Wisconsin and Minnesota, in that order.

The study assumes there will be no drastic changes in income, prices and technology.

PURINA DIVIDENDS

ST. LOUIS — The Ralston Purina Co. has declared a quarterly dividend of 75¢ payable Dec. 16 and also an extra dividend of $1 payable Jan. 4. Both are of record Dec. 5. Last year at this time the company paid an extra $1.

Corn Foundation Election

NEW YORK — At their annual meeting, trustees of Corn Industries Research Foundation, Inc., Washington and New York, elected William T. Brady president, and Theodore Sander, Jr., vice president. The newly elected officers replace Howard G. Wascher and A. E. Staley, Jr., respectively. Mr. Brady is first vice president of Corn Products Refining Co., New York. Mr. Sander is president of American Maize-Products Co., New York.

$70,000 BLAZE

HUGHES, ARK. — Damage was estimated at $70,000 after fire destroyed a feed store and a grain elevator and damaged several other buildings owned by the Wayne and Martin Feed Co. The Nov. 15 fire was said by the fire chief to have started from faulty electric equipment on top of the elevator.

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MODEL 4SWF
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SEPARATE FAN

New design provides separate eight-inch high - efficiency fan powered by separate 25 H.P. Motor. Ideal for installations where distances exceed 60 ft. from mill to collector. Available on both Jay Bee Models SW (General Grinding) and W (Heavy Grinding).

YOU'LL LIKE THESE JAY BEE FEATURES

- CONSTANT FEED CONTROL—This JAY BEE method of suspension grinding holds stock in contact with hammers by weight of stock, giving cooler, more uniform grind. Available with remote control assembly.
- MILLS TO FIT EXACT NEEDS—Three sizes of mills available in wide range of horsepower for custom grinding, general mill grinding and extra-heavy grinding. Precision engineered for rugged duty.

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All Want Ads cash with order.

MACHINERY FOR SALE

W. R. KELLAWAY AIRBLAST CAR LOADERS. Write G. Hagan Mill Machinery, Jefferson City, Mo.

FEED MIXER, 1-TON CAPACITY, guaranteed first-class throughout, 5 H.P. motor drive. Ad No. 3774, Feedstuffs, Minneapolis 1, Minn.

WHEN YOU ARE IN THE MARKET FOR new or used mill machinery, electric motors or any other equipment, write J. G. Hagan Mill Machinery, Jefferson City, Mo.

WRITE US, WE HAVE WHAT YOU NEED in supplies for feed and flour mills. If it's new or used, buy it from Hughes, Wayland, Mich.

FOR SALE—ONE 1952 CENTURY MODEL California Pellet Mill with cooler, granule cutter and shaker. One Richardson automatic bagging scale. Five Union Special bag closing machines and other feed milling equipment. Geis Mills, Box 9, Enid, Okla.

NEW AND USED EQUIPMENT CLOSE-outs—New Troughing Idlers and Return Rolls. Prices from $7.00. Conveyor and elevator belting in excellent condition. $1.00 per foot up. Write for List No. 1124. Bonded Scale Co., 124 Bellview, Columbus, Ohio. Phone: HI 4-3186.

FOR SALE—SCHUTTE MODEL 27 MILL with 50 H.P. Westinghouse motor with dust collector, pipe, magnet on base connected with flexible coupling. Good condition. Can be seen in operation next two weeks. Green Camp Cooperative Elevator, Green Camp, Ohio.

FOR SALE—WENGER MOLASSES MIXER; 4,000 lb. vertical feed mixer; 20x24 flaking rolls; 36" double attrition mill; 2,000 lb. horizontal mixers; Richardson automatic scales; Union Special sewing machines; steel elevator legs; conveyors; motors; hammermills; pellet mills. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

USED ELEVATOR BUCKETS, BELTING and bolts; used electric motors; rebuilt and guaranteed No. 4 American reducers; Reeves speed changers; rebuilt and guaranteed Tag Testers; No. 15 Prater Hammermill; 18" S-W double runner attrition mill, two 15 H.P. direct connected, 220-volt; 16 ft. double chain drag; 6" dia. used screw conveyor; 600 Nu-Hy buckets 11x4, new. Ad No. 1214, Feedstuffs, Box 67, Minneapolis 1, Minn.

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REBUILT MOTORS
BOTH OPEN AND TOTALLY-ENCLOSED
all 220/440 Volt—60 Cycles—3-Phase
TOTALLY ENCLOSED AT LESS THAN NEW OPEN MOTOR PRICES

H.P.	1,800 R.P.M.	1,200 R.P.M.
1	$53.00	$62.00
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7½	126.00	160.00
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15	193.00	253.00
20	253.00	311.00
25	278.00	

STANDARD OPEN-TYPE MOTORS

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1½	49.00	53.00	63.00	
2	59.00	63.00	70.00	
3	70.00	70.00	83.00	$113.00
5		83.00	108.00	
10		137.00		
15			217.00	
20			266.00	
25		256.00	331.00	
30	290.00	293.00	379.00	
40	325.00	364.00	474.00	
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Write, wire or phone 2-4710 for further information and quotation.
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"Over 30 years of Continuous Service to the Feed and Milling Industry"

MACHINERY FOR SALE

FOR SALE—GMC 671 DIESEL POWER unit, livebottom trailer for loading and unloading green alfalfa, 36" Ford portable grinder mounted on semi with diesel engine. Ad No. 1327, Feedstuffs, Box 67, Minneapolis 1, Minn.

FOR SALE—FROM CLOSED BREWERY in Easton, Pa.: Two steel grain bins, 4,400 cu. ft. each, 13' dia. x 33' high. Four steel grain bins, 2,050 cu. ft. each, 9' 6" dia. x 29' high. Perry Equipment Corp., 1402 N. 6th St., Philadelphia 22, Pa.

NEW EQUIPMENT FOR SALE—ONE S. Howes Co. No. OA corn cutter, $595. One Big Chief corn cutter and grater, $685. One No. 2 Strong-Scott molasses mixer, $3,091. One Model M-10 Kelly Duplex hammermill with 75 H.P. motor, 220 or 440 volts, magnet built in pan, $2,507. One Kelly Duplex twin molasses mixer, $1,645. Above equipment can be shipped immediately from H. Steele warehouse at 418 W. Myrtle St., Gainesville, Ga. All above equipment is in stock subject to a 5% cash discount, f.o.b. Gainesville, Ga.

HELP WANTED

WANTED SALESMAN INTERESTED IN specialty items sold to veterinarians only, to add to present representation. Ad No. 1308, Feedstuffs, Box 67, Minneapolis 1, Minn.

REPUTABLE OHIO GRAIN FIRM WANTS experienced man for merchandising grain and feed ingredients throughout Ohio and East. Excellent opportunity. Replies strictly confidential. Ad No. 1252, Feedstuffs, Box 67, Minneapolis 1, Minn.

WANTED—NUTRITIONIST TO ASSIST IN our livestock department, helping with formula work for our accounts in manufacturing their finished feeds. Wonderful opportunity. Good chance for advancement. When answering give full details. One of the oldest and largest vitamin and trace mineral manufacturers. Ultra-Life Laboratories, Inc., East St. Louis, Ill.

SALES MANAGER WANTED — EASTERN Pennsylvania feed manufacturing firm has an excellent oportunity for the right person capable of handling sales and merchandising of poultry and dairy feeds. Forward qualifications, experience and recent photograph if possible. Include salary requirements. Information will be kept in absolute confidence. Ad No. 1310, Feedstuffs, Box 67, Minneapolis 1, Minn.

FEED SALES & SERVICE MEN NEEDED—Have opening for two well-trained feed service men. Live in Chattanooga, Tenn., area. Home every night. Automobile and expenses. Very attractive weekly salary with guaranteed annual wage. Only experienced men should apply. Age 30 to 45. Dairy, livestock and hog experience preferred. Ad No. 1312, Feedstuffs, Box 67, Minneapolis 1, Minn.

TECHNICAL SERVICE REPRESENTATIVE —Excellent opportunity available for individual having animal nutrition training with basic producer of vitamins and antibiotics. Desire high caliber man with Masters or Ph.D. and experience in the feed trade. Remuneration in keeping with qualifications. Send qualifications, experience and if possible recent photo. All replies strictly confidential. Ad No. 1263, Feedstuffs, Box 67, Minneapolis 1, Minn.

FIELD SALES MANAGER WANTED — $10,000 per year starting salary. Well-located and fast-growing Iowa feed company is looking for an experienced and aggressive individual who can grow with the company. The man selected must be a go-getter, able to train and supervise salesmen working through dealers. This is a responsible position. If you are between 30 and 45 years of age, have good habits, have a proven sales record and a good automobile, then you may be the man we select. Tell us all about yourself in first letter. Confidential. Our men know about this ad. Ad No. 1324, Feedstuffs, Box 67, Minneapolis 1, Minn.

SITUATIONS WANTED

WANTED—FORMER FEED PLANT OWN- er and mill broker wants connection in Minneapolis area. Experienced and qualified 15 years. Knows feed and special ingredients. Will do some traveling. Ad No. 1323, Feedstuffs, 2272 Board of Trade Bldg., Chicago 4, Ill.

WANTED—LINE OF FEED MILL INgredients to sell dealers in Minnesota and Iowa. Now traveling this area for furniture manufacturer. 20 years' experience manufacturing feeds. Knows formula and promotion. Can prove ability. Ad No. 1322, Feedstuffs, 2272 Board of Trade Bldg., Chicago 4, Ill.

SALES MANAGER—I OFFER THE FOL- lowing qualifications to a progressive, medium sized feed mill: 36 years of age, farm background, Master of Science Degree in Animal Nutrition, seven years' experience in the feed business which includes formulation, production, sales promotion and sales management. At present I head an aggressive feed sales organization but for personal reasons desire a change. May I give you details? Ad No. 1326, Feedstuffs, Box 67, Minneapolis 1, Minn.

BUSINESS OPPORTUNITIES

FOR RENT—BUILDING ON 23,000 SQ. FT. of ground with trackage available. Iowa Investment Co., 605 First Ave. So., Fort Dodge, Iowa. Phone: 5-7191.

I WANT TO INVEST IN LARGE VOLUME retail or wholesale feed business in Alabama, Georgia, Mississippi or Florida. Must be moving several hundred tons a month. Ad No. 1317, Feedstuffs, 612 Board of Trade Bldg., Kansas City, Mo.

FOR SALE—FEED MILL AND ELEVATOR —Located near Dallas, Fort Worth, fast growing dairy and livestock area. New feed mill equipped for bulk handling and delivering, 75,000 bu. elevator, 12,000 sq. ft warehouse storage, brick office, 60 ft. truck scales, on track, 3 acres, making money, priced reasonably, can finance, owner has other interests. For details write Ad No. 1321, Feedstuffs, Box 67, Minneapolis 1, Minn.

WANTED—MAN BETWEEN 30 AND 45 years old to buy 50% of alfalfa dehydrating plant and manage business on $10,000 per year salary. Plant located in small town in Midwest with excess of alfalfa acreage and a ready local market. Plant is a double drum installation, 5,000 ton per year capacity with new pelleting equipment and bulk storage of 3,000 tons. Completely modern. $50,000 will swing deal. Will send photograph and further details to qualified applicants. Ad No. 1319, Feedstuffs, Box 67, Minneapolis 1, Minn.

NEW AND MODERN ELECTRIC PUSH button mill, seed and feed store. Building is brick and steel with 17,800 sq. ft. floor space. Equipment includes: Two 6,000 lb. mixers, one 24" hammer mill with 205 H.P. motors, one Puritan mixer, one 6,000 gallon molasses tank, one 50-ton truck hoist, one 60-ton automatic Toledo print weight scale, 12,000-bu. grain storage tank with elevator, one corn cutter, one oat crimper, one pea and bean thresher, one 5,000-bu. ear corn storage room, one No. 2A Western corn sheller, four grain trucks and trailer. Over-all business doing $[illegible],000 to $25,000 per month. For full particulars and pictures write to Wayne County Milling Co., Jesup, Ga. Phone: Day, 3200; night, 3246. Terms can be arranged.

Contact—
MID-WEST BUSINESS EXCHANGE
When you want to Buy or Sell
ELEVATORS or FEED MILLS
Ohio - Indiana - Illinois
Excellent Opportunities
Halbert C. Smith Plymouth, Ind.

MACHINERY WANTED

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. G. Hagan Mill Machinery, Jefferson City, Mo.

BABY CHICKS FOR SALE

BABY CHICKS—AS HATCHED OR SEXED —Five popular breeds and one hybrid. Quality - Quantity - Service. Wholesale prices. Milford Hatchery, Liberty Road, Randallstown, Md.

Grain Exports Show Decline in Argentina

WASHINGTON — Argentine grain exports during the first three months (July-September) of the 1955-56 fiscal year amounted to 1,160,000 metric tons compared with 1,914,000 tons in the same quarter of 1954-55, an overall reduction of 39.4%. These figures were reported this week by the U.S. Department of Agriculture.

The decline, USDA said, was due to much lower exports of corn and oats. Wheat and barley exports also showed reductions, but those of rye were substantially larger than in the same quarter last year.

Over half of the 815,000 tons of wheat exported during the first quarter of the current fiscal year went to Brazil. Most of the balance went to European markets. All of the 149,000 tons of corn and all of the rye, oats and barley exported in this period also went to European countries.

CAPITAL COMMENT

(Continued from page 11)

The failure of planted acreage to reflect the percentage rate of farm number decline appears to indicate the influence of the rigid high price support programs of the size of farms —and probably the natural migration of tenant farmers, share croppers and unreasonably small farmers into industrial opportunities which are spreading rapidly as the industrial plant of the nation offers better working conditions and better wages.

A charge that the high 90% of parity supports for the basic commodities have been responsible for the migration of small farmers, tenant-farmers and sharecroppers from farm activities may bear examination by Congress. It has been noted by present USDA farm economists that more than a million U.S. farm units have an income of less than $2,000 a year—a condition which, if true, would appear to indicate that farmers and others are deserting the "family farm" for more lucrative income sources in the now adjacent factory.

Helps Larger Farms More

One of the more trenchant criticisms of the 90% of parity support for basic commodities has been that it has been umbrella-like in nature—high enough to protect the small farmers but in its umbrella-manner it has provided a bonanza for larger farm units. This observation is supported by USDA figures revealing the firm strong demand for farms and the continuing high level of farm values. Part of this high level of farm values is suspected to be the result of the influence of acreage restrictions. It has been previously demonstrated that in areas of acreage-controlled crops, the farm with an acreage allotment has a much higher per acre land value than one without an allotment, even in the same county and with equally good land qualities.

Here again the rigid high price support advocates show a weakness in their cause. Plaintively they argue that the high support line is necessary for the well-being of the small family farm.

They draw an invidious comparison of farm prices—comparing prices during the periods of war, economic aid and export relief shipments with prices of 1954-55—and they blame the decline on the flexible price support policy of Ezra Taft Benson, secretary of agriculture.

If the high rigid 90% of parity support is such a snug harbor, why are farmers leaving in droves, a condition which, except for one deep depression year, has been continuing and accelerating since 1930?

Farm Migration

As more and more government statistical information becomes available, more attention centers on the focal point of infection of the farm community — that of the industrial revolution nature of the farm migration.

The U.S. industrial economy is zooming into higher and higher levels. Working hours are shortened for the person leaving a small, poorly equipped farm for labor opportunities in the factory. Wages and net income are better, and opportunities for the man's family are widely broadened.

Under those circumstances, is it the better part of wisdom for the farm bloc politicians to preach a gospel of retention of the small farm? For that matter, what do they define as a small family farm? Even in the home state of the former secretary of agriculture, Charles F. Brannan, Colorado, the Census Bureau reports a decline in farm numbers since 1950 of 13.6%; yet the planted acreage for the six major crops of that state in 1954 amounted to approximately 6,273,000 acres, as compared with 5,648,000 acres in 1953, according to

the USDA annual crop report of December, 1954. And this report includes mandatory acreage cutbacks in wheat within Colorado.

This hardly reveals that the decline in the number of small farm units in this state reflects a cut-back in farm production. Perhaps this is a good case example of the failure of high price supports to aid the small farmer. It may prove with some emphasis that the high support line is a provocation and an incentive for the factory farm which Mr. Brannan and the Farmers Union now so seriously deprecate.

There are strong indications in the official figures that the farm politicians may be out of step with the real nature of what is happening within the farm communities.

It now seems possible that the small farmer, with an uneconomical farm unit, has given up or is giving up the economic ghost of a comfortable living on a small farm and is migrating to a more comfortable life in the small town—with wage responsibilities passed on to industrial management, with none of the risk of the caprice of weather, and none of the investment requirements of modern farm machinery.

An even more penetrating look at the cause of the high support advocates requires an investigation of the cost of production of the high price-supported crops by areas to determine the equity of the level of support. It would appear impractical to attempt differentials of price support for fungible crops grown over a broad area or between areas since identity can so readily be lost. But the advocates of the price support theory have consistently declined to review the parity concept base of 1909-14 to reflect greatly improved production methods which have followed the mechanization of farms.

None of this touches on the very real cost-price squeeze which faces the farmer today. Thus far the measure of the cost-price squeeze appears only in average statistical material which merely irons out the high peaks with the low valleys. But there must be no doubt that the farm community of the nation as a whole is lagging behind industry in its share of the disposable national income.

Why, therefore, is this farm real estate market staying so firm? Secretary Benson and his aides insist it reflects a firm faith in agriculture. That seems to be a reasonable conclusion, but again one must ask for a definition of agriculture, of a farm unit.

USDA officials — evidently sensing farm politician antagonisms — seem unwilling to break the issue out into the open, with a frank statement that the migration from the farm is in full flower, that the farm community is no longer the magnolia bedecked cottage or the maple-shaded back porch type of operation.

Industrial Plant

The farm today is virtually a wired industrial plant, with electronic devices opening field gates for the cows to enter for milking. For the former calm of the farm air there is the substitution of the pound of diesel or gasoline engines. Instead of the odors of organic manures, one finds the astringent smells of farm chemicals. Farmers have seen the introduction of scientifically produced seeds and the introduction of scientifically prepared feeds as a substitute for scoop shovel mixing.

The farm politicians are way out of step with "Jim." Try as they will, they cannot persuade "Jim," down in the hollow with an unthrifty 10 acres, to stand by as their constituent when he sees at every hand his neighbors moving into urban or semi-urban areas, attracted by the shorter work-week, the steady pay.

Congressional aisles at this coming session are sure to be wet with crocodile tears for the lot of the small farmer. It is wondered if the farm politicos are really the farmers' friends.

A condition of the political climate in the farm communities obscured from casual observers is a definition of the farm vote. Of what is it composed? Certainly it is not farmers alone. These days the farm community consists of farmers, village merchants and dwellers whose living depends on sales and service operations they conduct within the farm community itself. The merchants sell clothing, farm equipment, plant food, seeds, feed, equipment and food. They purvey entertainment; they service television sets and radio equipment.

They, in reality, are a large part of the vote in a farm community. As farm prosperity rises and falls, they react accordingly. Lower sales of farm equipment predispose them to vote against their congressional representatives or against the party of a man in office.

It is possible that the farm bloc politicians are representing some merchants of the farm community rather than the farmer himself in their fight for high level price supports.

Rep. Hope to Retire

WASHINGTON—The forthcoming session of the 84th Congress will mark the retirement of Rep. Clifford C. Hope, ranking Republican congressman on the House Agriculture Committee. Mr. Hope disclosed recently that after thirty years in the national legislature he feels it is time to call it quits.

In Mr. Hope the state of Kansas has contributed the best of her politicians—whose absence in conclaves on national farm policies will be greatly missed in years ahead.

Clifford Hope not only represented Kansas well during the thirty years in Washington, but more than that, he represented the best in the bipartisan approach to the never-ending farm problem.

The Hope technique was best reflected in his studied, patient analyses of proposals put before Congress by eager advocates. It was the Hope method to assign to its proper place the heat and fury of the zealot and to fit such workable parts of these proposals into an appropriate pattern of farm legislation.

Possibly the hallmark of Clifford Hope was the trust and esteem with which he was held by his Democratic colleagues as well as those of his own Republican party. When a Democratic majority existed in Congress and controversial legislation on farm problems came to the floor of the House it was usually Clifford C. Hope that the Democratic managers of a bill called upon to carry the day.

On farm matters Rep. Hope had the last word on a subject, by common consent.

In the recent session of the 84th Congress Rep. Hope has been content to sit quietly in the wings as the administration pressed for sharp changes in the old program. But he accepted the role on the sidelines with the same calm reserve that has always characterized his entire congressional career—and last but not least, Rep. Hope was ever a gentleman.

HEADS WISCONSIN FORUM

WATERTOWN, WIS. — Ray Kaercher of the Globe Milling Co., Watertown, Wis., will be in charge of arrangements for the annual Watertown Farm Institute which will be held Jan. 28.

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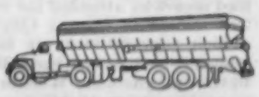

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NEW ASSISTANT MANAGERS—C. A. Green, center, extends best wishes to Henry F. Nixon, left, who has assumed his new duties as assistant manager of the Pennsylvania Farm Bureau Cooperative Assn's. seed division in Harrisburg. Looking on is John L. McCormick, new assistant manager of the feed division. Mr. Green is manager of the cooperative's feed and seed division. From 1938 to 1944 Mr. McCormick was assistant manager of the Westmoreland Farm Bureau, Greensburg, and he managed the organization until 1950 when he joined the Pennsylvania Farm Bureau. He has been serving as a feed division field man. Mr. Nixon joined the state farm bureau in 1947.

NATIONAL WINNERS—The six national 4-H dairy winners, named at the 4-H Club Congress in Chicago recently receive their $300 college scholarships awarded by the Larro SureFeed Division of General Mills, Inc. Harry A. Bullis, chairman of the board of General Mills, hands out the awards to, left to right, Shirley Ann Major of Loyal, Oklahoma, John Johnson of Meridale, N.Y., Christopher Little of North Marshfield, Mass., Don Zittlow of West De Pere, Wis., John Taylor of Trout Creek, Mont., and Gwendolyn Bentz of Chico, Cal.

Camera Views of the News

D. P. Williamson Jay H. Murdy

TO JOIN DR. SALSBURY'S—Two poultry management men will join the sales service staff of Dr. Salsbury's Laboratories Jan. 1. H. G. Bos, director of sales and advertising for the laboratories, announces the appointment of Jay H. Murdy to the Colorado-Wyoming territory and Dolphus P. Williamson to the north and southeast Mississippi territory. Mr. Murdy is a graduate of Colorado A&M College in poultry husbandry. He has served as assistant superintendent of the college poultry farm and has managed his own poultry farm in Vista, Cal., for four years. He will live in Ft. Collins, Colo. Mr. Williamson comes to the laboratories from a position as flock manager of the Mississippi Hatcheries in Jackson, Miss. He is a graduate of Mississippi State College in poultry husbandry. He will continue to live in Jackson.

AT THE PRODUCTION SCHOOL—Some of the many feed men who attended the recent Midwest Feed Production School in Kansas City are shown here. Between-session conversations are one of the highlights of the school, which brings open discussion of many problems. In the first photo are William Uher (left), Wooster (Ohio) Feed Manufacturing Co., and Ray Wentzel, Doughboy Industries, Inc., New Richmond, Wis. Left to right in the second picture are Elmer Winterscheidt, Winterscheidt Milling Co., Seneca, Kansas, president of the sponsoring Midwest Feed Manufacturers Assn.; his son, Gerald Winterscheidt, and Wright Cochran, Peter Hand Foundation, Topeka, Kansas. The third photo shows Maurice Watson (left), Dannen Mills, St. Joseph, Mo., and D. A. Zinn, A. K. Zinn & Co., Battle Creek, Mich.

WINNERS CONGRATULATED—The six first place winners in the Pfizer Livestock Judging Contest held recently in the Sheraton Hotel, Chicago, are shown being congratulated by Dr. John E. McKeen, president of Chas. Pfizer & Co., Inc. Shown, left to right, are Eldon Stuthman, Wisner, Neb., junior hogs; Don Morton, Lebanon, Ind., junior cows; George Wolfe, Troy Center, Wis., junior poultry; Mrs. Robert Juhl, Luverne, Minn., senior hogs; Joe T. Cobble, Cleveland, Tenn., senior cows, and Ray Siegmund, Wheeler, Texas, senior poultry.

KENILWORTHS VISIT KENILWORTH—The New Jersey community of Kenilworth, named after a famous English Barony, recently staged an all-out American welcome for Lord and Lady Kenilworth of England. High spot of the visit was a reception and tour of White Laboratories, Inc., manufacturer of Lipamone, the "in-the-feed" hormonizing agent for poultry. Lord Kenilworth, who was Sir Cyril Davenport Siddeley, is a director of the English firm of Armstrong-Siddeley, manufacturer of automobiles and motors. Pictured above during the tour of the laboratories are, from left to right, H. E. Willer, chairman of the White board; Mrs. E. Jordan, administrative assistant; James C. DeCesare, president, and Lady and Lord Kenilworth.

Production of Millfeed Shows Gain

Production of millfeed in tons for week ending Dec. 9, and prior two weeks, together with season total of (1) principal mills in Nebraska, Kansas and Oklahoma and the cities of Kansas City and St. Joseph; (2) principal mills of Minnesota, Iowa, North and South Dakota and Montana, including Minneapolis, St. Paul and Duluth-Superior; (3) mills of Buffalo, N.Y. Production computed on the basis of 72% flour extraction.

	Southwest* Weekly production	Southwest* Crop year to date	Northwest* Weekly production	Northwest* Crop year to date	Buffalo† Weekly production	Buffalo† Crop year to date	Combined** Weekly production	Combined** Crop yr. to date
Dec. 5-9	25,983	594,678	13,780	321,231	12,413	196,469	52,176	1,112,378
Prev. week	25,810		14,411		9,886		50,106	
Two wks. ago	23,396		12,032		10,402		45,830	
1954	25,488	583,863	13,584	315,042	10,238	246,532	49,310	1,147,437
1953	23,667	565,843	14,087	339,481	10,482	240,779	48,236	1,146,103
1952	24,229	596,129	14,998	362,409	9,754	244,887	48,981	1,202,416
1951	25,329	604,173	14,364	343,693	10,596	236,838	50,291	1,084,703

*Principal mills. **74% of total capacity. †All mills. ‡Revised.

SPRING FARROWINGS

(Continued from page 1)

The 1955 spring pig crop totaled 60½ million head, up 9% from 1954, and the 1955 fall crop was expected to be up 10%.

The secretary's warning against excessive spring pig farrowing follows a previous USDA report (Feedstuffs, Nov. 26) that the 1956 spring pig crop could be about the same size as the 1955 spring crop.

Although hog prices have been low, feed also has been down, and the hog-corn price ratio has not been so far below average as it might have been if feed had not declined. Also, if the supply of "free" corn should be large, a drop in the spring pig crop would not be so likely.

Mr. Benson noted that hogs apparently have been marketed somewhat earlier than usual this year. As soon as there is a reduction in marketing, as the peak is passed, an improvement in hog prices can be expected, he said.

In the meantime, he continued, USDA will continue to "help in every practicable way—just as long as the measures are sound and constructive, and will not simply build more troubles for the future."

Marketing Programs

Mr. Benson's statement on pork marketing programs was issued after a previous announcement of the heaviest buying to date under USDA's pork products purchase program.

"The purchase program under which the department buys lard and canned pork products for school lunch and welfare distribution is in full swing," he said. "Last week's purchases of 6.7 million pounds of canned pork products nearly doubled the previous week's buying. The total of lard and pork products already bought under this program is past the 28 million pound figure.

"We are emphasizing the plentiful foods program under which USDA cooperates with industry in promoting greater pork consumption.

"Exports of lard are being pushed under Public Law 480. Just one recent operation involves the sale of more than 11 million pounds to Brazil.

"Packers are adopting a method of trim which will result in less fat with retail pork cuts. This ties in with the program of greater efficiency and better marketing."

♥ ♥

Pork Buying

WASHINGTON—The U.S. Department of Agriculture reported canned pork product purchases last week of 6,697,500 lb. This weekly purchase total was the largest so far under the pork products buying program and was nearly double the previous week's canned pork purchases. Purchases, which began early in November under the program to help hog producers by expanding domestic consumption of pork products, now total 28,108,650 lb.

The USDA will continue to receive weekly offers to sell the USDA pork products.

Of the 28.1 million pounds bought to date, 13,533,450 lb. are canned pork (4,633,200 lb. of luncheon meat, 5,372,250 lb. of pork and gravy, and 3,528,000 lb. of canned ham) and 14,575,200 lb. are lard bought in previous weeks.

HATCHERY

(Continued from page 1)

fore the 1956 financial record is closed.

Earlier, as reported by USDA, turkey breeders indicated intentions to keep 13% more heavy breed hens for hatching egg production. And this brought a warning against possible over-production in 1956.

Fewer Light Breed Birds

Meanwhile, offsetting to some extent the potential advance in heavy breed production is a decline in hatchings of light breed poults.

This aspect of the turkey industry, which promised a steady year-round market for turkey, appears to have lost its sex appeal. This is attributed by officials to some difficulties in raising these birds, smaller number of eggs available, and the tendency of heavy breed producers to move some of the birds into markets at lighter weights.

It appears that the turkey industry must re-evaluate the light breed situation before it can count on this type to build a solid market.

Figures Reported

The hatchery report shows that hatchery production of heavy breed poults in November totaled 372,000—more than twice as large as the year earlier total of 179,000.

The number of heavy breed eggs in incubators on Dec. 1 was 1,275,000, compared with 749,000 a year earlier.

Production of light breed turkey poults in November totaled 575,000—down sharply from the total of 1,041,000 in the same month last year. Light breed eggs in incubators on Dec. 1 numbered 1,309,000, compared with 2,249,000 a year earlier.

More Chicks

While the turkey industry expansion is noted, the USDA figures also bear out the continued expansion of broiler chick placements over a year ago.

Hatchery production of all chicks in November hit a high for the month of 109.5 million, nearly 24 million over a year ago. As expected, broiler chick demand dominated the market, with approximately 94.7 million of the November-hatched chicks going for broiler production and the balance for other purposes.

Figures on eggs in incubators indicated that December chick production would also break previous records for the month. The number of eggs in incubators on Dec. 1 was 30% ahead of a year earlier.

Officials say that the continued large broiler production, even in the face of lower prices, probably results to some extent from the lower production costs which prevail with more efficient feeds.

Much has been written about the legalized gambling halls of Nevada, where thousands are won and lost on the turn of a card or the fall of the dice. But it now is wondered whether the poultry industries, in their unsensational way, may be minor Renos or Las Vegases. At least they provide speculative opportunities. But what remains to be known is whether they are operating on the well known percentage bases that can be calculated on the turn of a card, the spin of a wheel or the fall of the dice.

FARM LAW PROPOSALS

(Continued from page 1)

which have accumulated in sterile government surpluses are seen as "undesirable."

However, the idea has box-office appeal, according to the political fishermen, since it compromises with the rigid and flexible price support followers.

The next compromise step in the Benson program would be that of the so-called "soil-bank." The use of the word bank is an artful device since it cloaks a land rental program with the comforting description of "bank." This item of the program is a variant of the Agricultural Conservation Program fund, appearing to liberalize the provisions of the ACP bulletin and make more funds available over those allotted by Congress annually. It is a device to bypass the plan for a diverted acres ban once approved by Mr. Benson last year and later discarded.

Money Not Adequate

Analysts of the Benson announcement say that the amount of money which will be available for the "soil bank" will be governed by the budget balancing plans of the administration and consequently will be inadequate to meet the full requirements for reducing production of such major crops as wheat, corn and cotton. These observers feel that not less than $2 billion a year would be required to compensate producers for the amount of land which would have to be withdrawn from production of these three crops if supplies are to be brought into line with demand. These observers believe that wheat production would have to be cut to as little as 500 million bushels and cotton to approximately 5 million bales—drastic action for farmers growing these crops if they are not to be permitted to plant other crops on land removed from the basic crop production. Such a reduction would cut deeply into gross farm income and some compensatory payment would be necessary to hold these farmers in line as the nation goes through the long drawn out period of liquidating surpluses.

Previous statements from USDA indicate the department contemplates removal of about 25 million acres from production of wheat, cotton and corn. To top USDA officials this means merely the withdrawal of the poorest land from production of these crops, resulting in little modification of crop outturns since producers can, through modern farming techniques, expand output from the land remaining in cultivation. Plant food industry officials have talked of a technique wherein 75 million acres could be taken out of these crops—some of which would represent the best farming land of the nation—yet at the same time foreseeable requirements for cotton, wheat and corn could be sustained until the accumulated surpluses have been removed.

Limit Rumored

Although the price support gymnastics are seen as a compromise to hold wavering farm votes, USDA probably plans to go a step further and put a maximum limit on the amount of a farm crop which could be placed under high price support protection. Rumor has it that it would be limited to $25,000 a year for any one farm operation. This is seen as a guesswork decision, aimed at the so-called factory farms and a stop to the small farm unit. There is no solid basis on which to judge the operation of this phase of the USDA planning and consequently it should be marked off as political sweetening to woo the small farm operator.

Essentially a maximum limit on loan protection, even if the operator produces top quality products, is little less than a penalty on efficiency—just a step short of controls of marketing on a bushelage or pound basis for a crop.

It is now understood that in regard to compensation to farmers who withdraw land from field crop production, the USDA plan calls for paying them in kind—payments to be made in delivery from Commodity Credit Corp. stocks, for example, of wheat, cotton, corn or such other surpluses as the farmer may request. This plan is already under criticism by responsible Republican Senate leaders who sense that farmers who took such compensation would promptly resell these receipts back into the market and further depress domestic price levels even if acreage reductions tended to influence higher new crop price effects.

The foregoing items are on the restraining side designed to hold the farm vote in line and at the same time provide a check on production while surpluses are removed.

On the constructive side—the removal of surpluses—the USDA is in the realm of vague generalities, restating plans to promote surplus disposal in world markets whereas within the USDA itself there is a clear understanding that the U.S. is about at the peak of such operations now, and there is only the barest hope that the current level can be sustained even through the device of Public Law 480—which top USDA officials frankly dismiss as an example of the worst type of legislation.

Other Aspects

Other aspects of the Benson program which will go to Congress are largely rehashes of previous plans he has intimated, such as increased money for agricultural product use research, and relaxation of some present controls which would exempt from wheat acreage allotments wheat grown on farms where it would be used for feed.

The Benson announcement met with relatively small response from eastern newspapers, even those which have supported the secretary's policies vigorously. The New York Times, which came to his support this week in an editorial attack on high price supports, buried the announcement of the farm program way back in the paper.

As a vote-gatherer, observers here see the Benson program—if the disclosure this week represents all the meat—as a penny-pinching instrument, which may boomerang and do more harm than good. It is entirely possible, says one Republican farm bloc leader, that before the last roll call is taken in Congress on the farm legislation, the Benson program may be drastically reshaped.

CAMERON MILL

(Continued from page 1)

sacked feed will be made at this mill. Packaged merchandise will continue to be processed and shipped from the North Little Rock Plant.

The cost of the new installation will be approximately $75,000.

The North Little Rock mill was founded in 1914 by Guy Cameron, C. E. Hayes and the Rev. James Thomas, with Mr. Cameron later acquiring the interests of the other partners. In 1923, a new structure of steel and concrete replaced the old mill that was destroyed by fire.

The firm manufactures a full line of livestock and poultry feeds, distributed under the brand name Prime Quality in the south central section of the U.S.

THE FEED MARKETS

★ ★ ★ ★

Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

ALFALFA MEAL

New Orleans: Demand poor; trend firm; supply ample; 17% dehydrated, vitamin A guaranteed $55@59; non-guaranteed $53@56; 15% $50@52.

Memphis: Demand moderate; trend higher; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $57.30.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $60.55@66.55; 17% dehydrated, no A $55.55@61.55; 13% fine suncured $40@48.

Los Angeles: Demand slow; trend weaker; supply ample; 15% suncured $44; 17% dehydrated $50@51.

Kansas City: Demand continues to show fair to good strength; offerings limited; market undertone strong; blended 17% dehydrated alfalfa meal with 100,000 units of vitamin A guaranteed on arrival $54, sacked, Kansas City; straight run guaranteed meal $51@52, non-guaranteed A meal $43@48, sacked, Kansas City; moderate improvement in demand for suncured because of colder weather and dairy feed pickup; No. 1 fine ground suncured $40; No. 1 ¼-in. $37, No. 2 ¼-in. $34.50.

Ft. Worth: Demand fair; supply adequate; 17% protein, 50,000 A $47, basis f.o.b. Plainview area, December; northern origin 100,000 A $67.60@61.60, delivered Ft. Worth, depending on origin of tonnage.

Portland: Demand slow; supply ample; trend unchanged; 15% suncured $46, delivered Portland; 15% suncured $45, delivered California; dehydrated $55, delivered California.

Minneapolis: Dehydrated alfalfa meal prices are about unchanged, but suncured is somewhat easier; demand is fair. Quotations: 17% dehydrated, 100,000 units of vitamin A guaranteed $54@58.50; granules and oil-treated $60.50, with bulk $3 ton less; non-guaranteed $47@52.50; 15% suncured No. 1 fine ground $43@44.

Buffalo: Demand and supply fair; trend steady; $70, sacked, Boston.

Omaha: Demand fair; supply ample; 17% dehydrated, non A $46@47; 17% dehydrated, 100,000 A $50@51.

St. Louis: Demand for dehydrated fair, suncured slow; trend firm; supply of dehydrated limited, suncured adequate; dehydrated, 17%, 100,000 A $55 ton; suncured No. 1 fine ground, 13% $44.50 ton, f.o.b. St. Louis.

Milwaukee: Demand and supply fair; western dehydrated, 17%, with 100,000 A guarantee $56, without $53.

Chicago: Demand slow; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $55.50@56; 17% with no A guaranteed $50@51; 15% dehydrated no A $44.50@45; 13% fine ground suncured $42.50@44.

Philadelphia: Demand and supply fair; 17% dehydrated $62.

Seattle: Demand slow; trend steady; supply good; 15% protein suncured $46.50 ton, 136,000 A unit dehydrated $65 ton, both delivered, carlots.

Boston: Demand light; supply good; dehydrated 17% $61; suncured 13%, Colorado $55.25.

BARLEY FEED

Seattle: Demand and trend steady; supply good; whole $57 ton, ground $57 ton, rolled $58 ton, all ex-warehouse, l.c.l., sacked.

Ogden: Supply normal; rolled $44@49, whole $37@42.

Baltimore: Demand quiet; supply ample; $42.

Chicago: Demand quiet; supply ample; $34.

Milwaukee: Demand and supply fair; pulverized, white $45, feed $44; needles $3@39¢ bu.

Philadelphia: Demand dull; supply fair; pulverized $48.

Boston: Demand slow; supply ample; $41.50@45.

San Francisco: Demand fair; supply ample; rolled $60.50, ground $59.50.

New Orleans: Demand fair; trend steady; supply sufficient; pulverized $51@53.

Portland: Demand slow; supply ample; trend unchanged; rolled $58, ground $56.

Los Angeles: Demand moderate; trend steady; supply ample; standard rolled $2.92, standard ground $2.82.

BENTONITE (SODIUM)

Chicago: Demand very good; supply adequate; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $15.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $12.50, f.o.b. Belle Fourche, S.D., minimum 36-ton carlot; 40 granular $13.50 net; 200 mesh fine $13.25 net.

BLOOD FLOUR

Louisville: Demand dull; trend easy; supply good; $85@90 ton.

New Orleans: Demand slow; supply adequate; trend easier; $90@95.

BLOOD MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $130.

New Orleans: Demand fair; trend steady; supply adequate; $90@95, local plants.

Louisville: Demand slow; trend easy; supply good; $85@90 ton.

Portland: Demand slow; supply ample; trend unchanged; $110.

Los Angeles: Demand fair; trend steady; supply ample; $4.50 a unit of ammonia.

Chicago: Demand slow; supply adequate; $115@117.50 ton, guaranteed 80% protein.

Ogden: Supply normal; $95 ton in 100-lb. bags, f.o.b. Ogden.

San Francisco: Demand slow; supply ample; $4.75 a unit of ammonia; screened $4.65 a unit of ammonia.

Seattle: Demand slow; trend easy; supply good; $90 ton, ex-local packing plants, l.c.l.

BONE MEAL

Ft. Worth: Demand fair; supply sufficient; $85 sacked, f.o.b. Ft. Worth, local manufacture.

San Francisco: Demand good; supply fair; $58.

St. Paul: Market firm; demand good; $72.50 in large lots.

Omaha: Demand good; supply ample; $80.

New Orleans: Demand dull to fair; trend easier; supply adequate; $80@85.

Louisville: Demand slow; trend steady; supply normal; $70@75 ton.

Cincinnati: Demand good; trend steady; supply fair; $80@85 ton, sacked, f.o.b. Cincinnati.

BONE MEAL (STEAMED)

New Orleans: Demand fair; trend steady; supply ample; $85@89.50.

Louisville: Demand slow; trend steady; supply normal; $75@80 ton.

Los Angeles: Demand fair; trend steady; supply ample; domestic $89.50, car or truck load.

Chicago: Demand slow; supply adequate; $65@75.

Buffalo: Demand good; trend steady; supply ample; $85 ton, sacked.

St. Louis: Demand good; trend firm; supply adequate; $90@92 ton, sacked.

Seattle: Demand steady; trend easy; supply good; $85 ton, ex-dock, l.c.l.

San Francisco: Demand good; supply ample; $82.50.

Ft. Worth: Demand slow; supply adequate; best quality German production, 72% B.P.L., 14% phosphorus, 31% calcium $78, 100-lb. paper-lined burlaps, f.o.b. Houston.

Boston: Demand slow; supply tight; $90, nominal.

BREWERS DRIED GRAINS

Philadelphia: Demand dull; supply light; $60.

Chicago: Demand good; supply tight; 24% $54@54.50.

Ft. Worth: Demand fair; supply scarce; 24% nominal $63@65, prompt, delivered Ft. Worth.

St. Louis: Demand good; trend firm; supply limited; $45 ton bulk, $50 ton sacked.

Buffalo: Demand and supply poor; trend steady; $56, bulk, Boston.

Milwaukee: Demand and supply fair; 26% $54@54.50.

Boston: Demand and supply good; 26% $54, bulk; 22% $57, sacked.

Los Angeles: Demand good; trend steady; supply limited; $54, f.o.b. Van Nuys.

New Orleans: Demand fair to good; trend steady to stronger; supply adequate; $56@60.

Cincinnati: Demand fair; trend steady; supply adequate; $58@59.

Louisville: Demand good; trend steady; supply fair; $53 ton.

BREWERS DRIED YEAST

Louisville: Demand fair; trend steady; supply ample; 10¢ lb.

Los Angeles: Demand good; supply ample; trend steady; 10¢.

San Francisco: Demand fair; supply good; 10½¢ lb.

Omaha: Demand good; supply poor; 11½¢ lb., carloads; 12½¢ lb., less than carloads.

Buffalo: Demand poor; trend weaker; supply ample; $10.25 cwt.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10½@13½¢ lb., l.c.l.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 10½¢ lb. in 5-ton lots; 11¢ lb. in ton lots; 11½@12¢ lb. in less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢ lb.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10½@13½¢ l.c.l.

Boston: Demand light; supply steady; 11@11½¢ lb.

BUTTERMILK-CONDENSED

San Francisco: Demand fair; supply good; $5.35 cwt.

Ogden: Supply normal; $4.90, 100-lb. drum.

Chicago: Demand steady; supply fair; $3.25@3.50 cwt. in carlots.

Philadelphia: Demand dull; supply fair; $4.25.

Boston: Demand and supply fair; 4@4½¢ lb.

Louisville: Demand fair; trend firm; supply normal; $4.25 cwt.

New Orleans: Demand fair; trend steady; supply ample; $4.25@4.50 cwt.

Los Angeles: Demand fair; trend steady; supply ample; 100-lb. drums $5.25; large barrels $4.60.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $12.48, flour $9.42.
Buffalo: Crystals $14.20, flour $10.20.
Toledo: Crystals $15.77, flour $11.77.
Boston: Crystals $14.52, flour $10.62.
Limecrest, N.J.: Crystals $9.50, flour $5.50.

CALCIUM CARBONATE

Seattle: Demand steady; supply ample; trend unchanged; $14 ton, ex-warehouse, truck lots.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9.

Minneapolis: Plain $10; iodized (¼ lb. KI per ton) $13.50; iodized-manganesed $15.05.

Chicago: Plain $8.55 ton in 100-lb. bags, delivered.

Los Angeles: Demand fair; trend steady; supply ample; meal and flour $10.53 ton, carlots; grits $13.03 ton, carloads.

CHARCOAL

San Francisco: Demand steady; supply ample; $59.50.

Chicago: Demand quiet; supply limited; poultry charcoal $102 ton in 50-lb. multiwalls.

Boston: Demand slow; supply light; $95, nominal.

New Orleans: Demand slow; supply ample; trend steady; 40-lb. bags oak charcoal $2.40; poultry in 50-lb. bags $2.55.

Los Angeles: Demand slow; trend steady; supply ample; poultry charcoal, oak, 40-lb. bags, in ton lots $2.40.

COCONUT MEAL

Los Angeles: Demand slow; trend weak; supply ample; cake, ex-dock, December $68.

Portland: Demand slow; supply ample; trend unchanged; $71.

San Francisco: Demand fair; supply ample; solvent $65, expeller $70.

Seattle: Demand slow; trend easy; supply limited; $71 ton, ex-dock, 30-day shipment from Philippines.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply good; 600 D, 2,250 A 22¢ lb.; 300 D, 2,250 A 21¢; 300 D, 1,500 A 18½¢.

New York: Trend steady; price per lb. in 55-gal. drums (400 to 420 lb.): 300 ICU, 750 A 16@18¢, 1,500 A 17½@19½¢, 2,250 A 19@22¢, 3,000 A 19½@23¢; 600 ICU, 1,500 A 18@19½¢, 2,250 A 20@22¢, 3,000 A 22@23½¢; f.o.b. Massachusetts, New York, New Jersey or Pennsylvania. Ranges include variance in offerings and f.o.b. shipping points.

Dayton: Trend steady; price per lb. in 55-gal. drums (410 lb.): 300 ICU, 1,500 A 19½¢, 2,250 A 20½¢, 3,000 A 21½¢; 600 ICU, 1,500 A 20½¢, f.o.b. Dayton.

CONDENSED FISH SOLUBLES

Los Angeles: Demand good; trend steady; supply ample; 5¢.

Boston: Demand active; supply fair; 4¢ lb.

CORN GERM MEAL

St. Louis: Demand slow; trend steady; supply limited; $42 ton bulk, $47 ton in burlap sacks, St. Louis.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $51.77, meal $66.77.
Atlanta: Feed $58.92, meal $72.92.
Birmingham: Feed $57.13, meal $71.13.
Boston: Feed $56.15, meal $70.15.
Chicago: Feed $46, meal $60.
Cleveland: Feed $53.04, meal $67.04.
Denver: Feed $55, meal $69.
Ft. Worth: Feed $55.50, meal $67.50.
Indianapolis: Feed $50.50, meal $64.50.
Kansas City: Feed $46, meal $60.
Louisville: Feed $52.11, meal $66.11.
New Orleans: Feed $54.88, meal $68.88.
New York: Feed $55.69, meal $69.69.
Norfolk: Feed $55, meal $69.
Philadelphia: Feed $55.23, meal $69.23.
Pittsburgh: Feed $53.50, meal $67.50.
St. Louis: Feed $46, meal $60.

CORN OIL MEAL

New Orleans: Demand fair; trend steady; supply adequate; $51.88@52.88.

Louisville: Demand dull; trend steady; supply ample; $51.80 ton.

Cincinnati: Demand fair; trend steady; supply adequate; $51.85@52.85.

COTTONSEED OIL MEAL

Kansas City: Demand fair for trucks and small orders from dealers selling to cattle feeders; prices slightly easier; offerings fair; old process $56.50@57, sacked, Memphis; solvent process $58@58.50.

Cincinnati: Demand fair; trend steady; supply adequate; $64.50@67.

Memphis: Demand dull; trend steady; supply tight; prime 41% protein, old process $56, sacked; new process, 41% solvent $54, sacked.

New Orleans: Demand dull; trend steady; supply adequate; 41% old process $73.50@76.

Louisville: Demand slow; trend easy; supply ample; new process $59.33; old process $62.33.

Los Angeles: Demand slow; trend steady; supply ample; $61.

Ft. Worth: Demand improved; offerings very light especially for December; carlots, sacked, central and north Texas origin, 41% old process $64@65; solvent, 41% low gossypol, fat added $60.50@62.50, delivered Ft. Worth; pellets $2 additional.

Wichita: Demand improved; supply sufficient; 41% $67.

Portland: Demand slow; supply ample; trend unchanged; $61, f.o.b. Los Angeles.

Ogden: Supply normal; 41% $73@83.

Philadelphia: Demand dull; supply ample; $65.50.

Seattle: Demand slow; trend easy; supply good; $75 ton, delivered, carlots, 41% protein expeller.

San Francisco: Demand good; supply ample; expeller $64, solvent $63.

Chicago: Demand fair; supply tight on nearby; hydraulic $65@65.50; solvent $64@64.50.

Boston: Demand slow; supply good; 41% $70.

Atlanta: Demand fair; trend steady; supply ample; 41% $55, sacked, immediate.

Omaha: Demand fair; supply adequate; 41% solvent $67.50, pellets $71.50.

Buffalo: Demand poor; trend steady; supply adequate; $71, sacked, Boston.

A AND D FEEDING OIL

Seattle: Demand and trend steady; supply ample; 300 D, 2,250 A 22¢ lb., 300 D, 1,500 A 19¢ lb., 300 D, 750 A 17¢ lb., all ex-warehouse, drums included.

Chicago: Demand fair to good; supply adequate; straight A feeding oil, with 16,000 units vitamin A per gram 9@10¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago; drums included.

Buffalo: Demand steady; supply adequate; 300 D, 750 A 18½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 2,250 A 23½¢ lb.; 300 D, 3,000 A 26½¢ lb.; 600 D, 4,000 A 31¢ lb.; straight vitamin A feeding oil 10½@11½¢ per M. U., drum lots, drums included, basis Buffalo.

Milwaukee: Demand and supply fair; 85 D, 100 A 18¢; concentrated vitamin oils, 300 D, 750 A 19¢; 300 D, 1,500 A 21¢; 300 D, 2,250 A 23¢.

Minneapolis: All with DPPD—10,000 A 28¢ lb.; 300 D, 2,250 A 20¢ lb.; 300 D, 1,500 A 18¢ lb.; 300 D, 750 A 16¢ lb.

Boston: Demand slow; supply good; 600 D, 1,500 A 17¢ lb.; 300 D, 2,250 A 19¢; 300 D, 1,500 A 16¢; 300 D, 750 A 15¢.

New York: Trend steady; price per lb. in 55-gal. drums (400 to 420 lb.): 300 ICU, 750 A 13½@17¢, 1,500 A 15½@19½¢, 2,250 A 17½@21½¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@20½¢, 2,250 A 18@19½¢, 3,000 A 20@25¢; f.o.b. Massachusetts, New York, New Jersey or Pennsylvania. Ranges include variance in offerings and f.o.b. shipping points.

Dayton: Trend steady; price per lb. in 55-gal. drums (410 lb.): 300 ICU, 750 A 18¢; 1,500 A 21¢, f.o.b. Dayton.

D ACTIVATED ANIMAL STEROL POWDERED

Kansas City: Demand fair; trend steady; supply adequate; 10½@11¢ lb.

Cincinnati: Demand poor; trend steady; supply ample; 1,500 ICU 11@12¢; 3,000 ICU 18¢, warehouse.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 10@13.5¢ bagged, 11@13¢ drums; 3,000 ICU 16@19¢ bagged, 17@18¢ drums, f.o.b. New York and New Jersey.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: $49.50.
Houston: 19% $69.50.
Wales, Tenn.: $62.10.

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17% $56 net ton, f.o.b. Coronet in 100-lb. multiwall bags, $54 in bulk; minimum phosphorus 14.5%, minimum calcium 34%, maximum fluorine 0.145% $48 net ton, f.o.b. Coronet, in 100-lb. multiwall bags, $46 in bulk.

DICALCIUM PHOSPHATE

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $32.99 ton, delivered; $3 ton less in bulk.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $84, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $74, f.o.b. Trenton in 100-lb. multiwall bags.

East St. Louis: Monocalcium or dicalcium phosphate, 18½% phosphorus $74 ton, bagged, f.o.b. cars.

Adams, Mass.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Adams, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis.

Columbia, Tenn.: Minimum phosphorus 23¼%, minimum 25% calcium, maximum .01% fluorine guaranteed $76 ton, f.o.b. Columbia, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis.

Bonnie, Fla.: Demand improving; supply adequate; minimum phosphorus 18½% granular $74. Freight equalized with closest dicalcium phosphate producing point, carload basis.

St. Louis: Minimum phosphorus 18½%, maximum fluorine .01% guaranteed $74, f.o.b. St. Louis in 100-lb. multiwall bags.

Chicago: Demand fair; supply adequate; stock food grade, 18.5% phosphorus, 30,000 lb. or more $74 net ton in 100-lb. papers, basis Chicago Heights, Ill.; less than 20,000 lb. $79 net ton; 21% phosphorus 20,000 lb. or more $84 net ton, basis Chicago Heights and Nashville, Tenn., less than 20,000 lb. $89 net ton.

Portland: Demand slow; supply ample; $96.

Cincinnati: 18% phosphorus $78@81.50.

DISTILLERS DRIED GRAINS

New Orleans: Demand dull; trend easier; supply adequate; $53@57.

Louisville: Demand good; trend steady; supply light; large producers sold up for December; bourbon grains, light $50, dark $51, solubles $77.

Buffalo: Demand and supply fair; trend steady to higher; $65, bulk, Boston.

Cincinnati: Demand fair; trend steady; supply adequate; $50@55.

Boston: Demand slow; supply adequate; domestic, light $58.75, dark $59.75.

San Francisco: Demand fair; supply ample; $57.50; solubles $80.

Philadelphia: Demand dull; supply light; $58.

DRIED BEET PULP

San Francisco: Demand good; supply fair; $60.36.

Atlanta: Demand fair; trend steady; supply ample; $72.50, sacked, immediate.

Milwaukee: Demand and supply fair; $55@60.

Boston: Demand fair; supply ample; $66@67.

Buffalo: Demand and supply fair; trend steady; $66.50, sacked, Boston.

Seattle: Demand good; trend firm; supply limited; $61 ton, delivered, carlots.

Ogden: Supply normal; $46@50 ton.

Ft. Worth: Demand slow; supply moderate; carlots, 50-lb. papers $65@66, delivered Ft. Worth, December shipment.

New Orleans: Demand fair; trend steady; supply ample; $56.38@58.88.

Los Angeles: Demand and trend steady; supply ample; $56.47, paper bags.

DRIED BUTTERMILK

New Orleans: Demand slow; trend steady; supply adequate; $11.50@12 cwt.

Louisville: Demand slow; trend easy; supply ample; $10.75@11.25 cwt.

Ft. Worth: Demand fair; supply extremely limited; local production $12 cwt., f.o.b. Ft. Worth.

Minneapolis: Market steady; demand limited; supply ample; $10@11 cwt.

Buffalo: Demand good; trend firmer; supply very limited; $11.35 cwt.

Milwaukee: Demand and supply fair; 12@13¢.

Chicago: Demand improved; supply tighter; $10.50@11 cwt., in carlots.

Wichita: Demand slow; supply adequate; $8.25 cwt.

Ogden: Supply normal; $8.65, 100-lb. bag.
Boston: Demand fair; supply scarce; 11½¢ lb.
San Francisco: Demand fair; supply ample; $13.75 cwt.
Los Angeles: Demand fair; trend steady; supply light; $13.75@14.

DRIED CITRUS PULP

San Francisco: Demand good; supply fair; meal $55.
Boston: Demand slow; supply ample; $60 @60.50.
Atlanta: Demand fair; supplies ample on pulp, limited on meal; trend weak on pulp, steady on meal; pulp $46, meal $45, sacked, immediate.
New Orleans: Demand good; trend steady; supply limited; $56@58.
Los Angeles: Demand good; trend steady; supply not too plentiful; f.o.b. southern California producers' plants; orange $47 sacked, $42 bulk.

DRIED SKIM MILK

New Orleans: Demand fair; trend weaker; supply ample; 12@12½¢ lb.
Cincinnati: Demand fair; trend steady; supply adequate; 11@12¢.
Louisville: Demand slow; trend steady; supply ample; $12@12.50 cwt.
Portland: Demand slow; supply ample; trend unchanged; $12.50.
Minneapolis: Market steady; demand limited; supplies adequate; $11.50@12 cwt.
Buffalo: Demand slow; trend weak; supply ample; $11.50 cwt.
Milwaukee: Demand and supply fair; 13½¢.
Los Angeles: Demand fair; trend steady; supply ample; $13.50.
Chicago: Demand steady; supply adequate; $11.50 cwt. in carlots.
Philadelphia: Demand and supply fair; $13.
San Francisco: Demand and supply fair; 13½¢ lb.
Boston: Demand fair; supply ample; 12 @12½¢ lb.

DRIED WHEY

Kansas City: Demand fair; trend steady; supply moderate; straight grade $6, partially delactosed $6.50.
Ft. Worth: Demand fair; supply adequate; carlots, standard $4 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots, f.o.b. warehouse, Ft. Worth.
San Francisco: Demand steady; supply good; $6 cwt.
Ogden: Supply normal; $6.90, 100-lb. bag.
Chicago: Demand steady; supply scarcer; $6 cwt. in carlots.
Philadelphia: Demand and supply fair; $6.25.
Seattle: Demand steady; supply good; trend unchanged; $7 cwt., ex-warehouse, l.c.l.
Boston: Demand poor; supply plentiful; 6¢ lb.
Cincinnati: Demand fair; trend steady; supply adequate; $6.
New Orleans: Demand dull; trend steady; supply adequate; $6.15@6.25 cwt.
Louisville: Demand fair; trend steady; supply ample; $6.50 cwt.
Portland: Demand slow; supply ample; trend unchanged; $6.50.
Buffalo: Demand poor; trend steady; supply fair; $6 cwt., delivered.
Los Angeles: Demand fair; trend steady; supply ample; fortified $6.15, unfortified $6.
Minneapolis: Market unchanged at $5.25 @5.75 cwt.

FISH MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $155@160.
New Orleans: Demand fair; trend easier; supply limited; 60% $154@155.
Louisville: Demand fair; trend steady; supply ample; $160@165 ton.
Los Angeles: Demand and trend steady; supply ample; $2.30 a unit of protein.
Chicago: Demand easy; supply limited; menhaden fish meal, 60% protein, f.o.b. East Coast $155 ton; 60% blended West Coast $140; Northwest herring-salmon blend $140; herring meal 73% protein $2.15 a unit of protein.
Minneapolis: Market firmer; demand fair; supplies adequate; 60% $160@164; 70% $2.20@2.25 a unit of protein, West Coast.
Buffalo: Demand good; trend steady; supply limited; $162 ton, bulk; $165, sacked.
Milwaukee: Demand and supply fair; 60% $175.
Atlanta: Demand fair; trend steady; supply limited; 60% $165, sacked, immediate.
Seattle: Demand fair; trend firm; supply good; $2.40 a unit protein, Canadian herring meal, carlots.
Portland: Demand slow; supply ample; trend unchanged; $2.26, f.o.b. Vancouver; $2.35, f.o.b. California.
San Francisco: Demand slow; supply ample; $2.35 a unit of protein.
Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $171@172.
Boston: Demand active; trend firmer; supply scarce; $155, nominal.
Ft. Worth: Demand good; supply limited; pilchard fullmeal 63% protein, solubles added back $157.50, f.o.b. Houston, December.

HAY

Ogden: Supply normal; $1.25 bale; $24@30 ton in the barn.
Seattle: Demand strong; trend firm; supply tight; $42 ton, delivered truck lots, U.S. No. 2 green.
Wichita: Demand slow; supply plentiful; prairie $17@22, alfalfa $25@30.
Philadelphia: Demand and supply fair; as to quality $32.
Ft. Worth: Demand fair for alfalfa, nil for others; supply sufficient; carlots, baled, No. 1 alfalfa $38@40, No. 2 $36@38; prairie, No. 2 $28@30; Johnson grass, No. 2 $26@28, delivered.
Boston: Demand steady; supply plentiful; No. 1 timothy $38@40, No. 2 $35; second cutting alfalfa $50.
Buffalo: Demand steady; No. 2 timothy $18@20; No. 2 alfalfa $25@28; straw $10 @14.
St. Louis: Demand good; trend higher; supply ample; No. 1 timothy $25@28 ton, No. 1 prairie $25@28 ton, No. 1 alfalfa $25@28 ton, No. 1 clover $18@20 ton, straw $14@16 ton.
Cincinnati: Demand slow; trend steady; supply adequate; No. 1 timothy (new) $21; first cutting alfalfa (new) $21, second cutting $25; fancy No. 1 clover and timothy mixed $27; No. 1 red clover $23; bright wheat or oat straw $14.
New Orleans: Demand fair to slow; trend steady; supply plentiful; timothy and clover $27@28; baled alfalfa $30@36; prairie $25 @28.
Louisville: Demand slow; trend steady; supply ample; No. 1 hay, such as timothy, clover, alfalfa or mixed timothy and clover $30, No. 2 $28; lespedeza $25; straw $14 @15 ton.
New York: Demand fair; trend unsteady; supply sufficient; Canadian competition continues, underselling domestic timothy by a considerable margin in many cases; domestic quotations mostly nominal; No. 1 timothy $34@36, No. 2 $28@31, No. 3 $24 @25.
Los Angeles: Demand slow; supply ample; trend weak; U.S. No. 1 $33@34; U.S. No. 2, leafy $31@33; U.S. No. 1, green $31@ 32; U.S. No. 2 $28@30.

HOMINY FEED

Kansas City: Demand moderate; trend higher; supply light; recent sales on basis of $47.50@48, sacked, Kansas City; trading very light.
Seattle: Demand slow; trend steady; supply good; $61 ton, delivered, sacked, carlots.
Chicago: Demand good; supply very limited; $47.50.
Boston: Demand steady; supply adequate; $54.50@55.
Milwaukee: Demand and supply fair; $47.75.
Buffalo: Demand and supply fair; trend steady; $52, bulk, Boston.
New Orleans: Demand fair to good; trend steady to higher; supply limited; $50@53.
Memphis: Demand poor; trend steady; supply ample; white $46, yellow $49.
Louisville: Demand fair; trend stronger; supply normal; $46.20 ton.
Cincinnati: Demand fair; trend stronger; supply adequate; $49.

LINSEED OIL MEAL

Cincinnati: Demand fair; trend easy; supply adequate; $72.75@77.75.
New Orleans: Demand slow; supply adequate; trend steady; 32% or higher protein $79.50@82.
Louisville: Demand slow; trend weak to easy; supply normal; new process $73.95, old process $80.45.
Kansas City: Demand slow; trend easier; supply adequate; export orders apparently nearly filled and more available domestically now; prices have declined as consequence; 36% protein $55@55.50, bulk, Minneapolis, for nearby shipment.
Los Angeles: Demand slow; supply ample; trend steady; $63.
Seattle: Demand slow; trend steady; supply good; $58 ton, delivered, carlots, 34% solvent; $52 ton, ex-dock, domestic, 30% expeller.
Minneapolis: Trade remains light, although the spot market is holding fairly firm at $56, bulk, Minneapolis; January-forward quotations are in a range of $53 @56; 22% flaxseed screenings oil feed $42.50, with some available for less.
Omaha: Demand fair; supply adequate; 34% expeller $76.50, pellets $79; 26% solvent $70, pellets $72.50.
Portland: Demand slow; trend lower; supply ample; $63, f.o.b. Los Angeles.
Chicago: Linseed oil meal moved very slowly during the week ending Dec. 14. Supplies were said to be pressing and processors were asking for December directions. The seasonably low demand, as well as reluctance on the part of feed manufacturers to extend their inventories, caused a price decline. Quotations Dec. 14: solvent linseed oil meal $67; expeller $74@74.50.
Ft. Worth: Demand fair; supply light; carlots, 36% or better $80.82 December-January, $79.82 February-April, delivered Ft. Worth; pellets $2.50 premium.
Wichita: Demand fair; supply sufficient; 34% $81.
San Francisco: Demand and supply fair; $70.
Philadelphia: Demand and supply fair; 34% $79.
Boston: Demand slow; supply scarce; $80 @84.

MALT SPROUTS

Chicago: Demand and supply fair; No. 1 $42.50@43.
St. Louis: Demand good; trend firm; supply ample; No. 1 bulk $36 ton, No. 1 sacked $42 ton, No. 2 sacked $33 ton.
Milwaukee: Demand and supply fair; $43 @45.
St. Paul: Market easier; demand fairly good; quotations: 50% meat and bone scraps $70.
Buffalo: Demand fair; trend steady; supply ample; 50% meat scraps $70 ton, bulk; $73, sacked.
Omaha: Demand slow; supply ample; $72.50.
St. Louis: Demand slow; trend steady; supply ample; 50% $75@78 ton bulk, $79@ 82 ton in paper sacks, $80@83 ton in burlap sacks.
Milwaukee: Demand fair; supply good; 50% $67.50, bagged.
New Orleans: Demand fair; trend higher; supply scarce; No. 1 $48@49.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $49@50.

MEAT SCRAPS

Cincinnati: Demand good; trend stronger; supply fair; 50% $67 ton, sacked, f.o.b. Cincinnati.
Louisville: Demand dull; trend weak; supply good; $65@70 ton.
New York: Demand good; trend steady; supply sufficient; 50% $67.50, 55% $72.50, bulk; 50% $70, 55% $75, sacked.
New Orleans: Demand fair; trend steady; supply adequate; 50% meat and bone $77 @80, local plants.
Los Angeles: Demand and trend steady; supply ample; $1.55 a unit of protein.
Ogden: Supply normal; $76 ton, in 100-lb. bags.
Portland: Demand slow; supply ample; trend unchanged; $1.35.
Chicago: Demand slow; supply heavy; 50% protein $62.50@70; 55% $77.
Ft. Worth: Demand slow; supply ample; meat and bone, 50% $67@70, sacked, f.o.b. or delivered Ft. Worth.
Kansas City: Demand slow; trend steady; supply light, with production mostly sold for current month; 50% meat and bone scraps $65@70, sacked, Kansas City.
Seattle: Demand slow; trend easy; supply good; $70 ton, ex-warehouse, truck lots, 50% protein.
San Francisco: Demand fair; supply good; $1.50 a unit of protein.
Wichita: Demand good; supply inadequate; 50% $72.50, f.o.b. plant; 55%, no quotations, no offerings.
Boston: Demand fair; supply steady; $1.10 a protein unit; converted 50% $67.50.

MILLFEED

Minneapolis: Markets were somewhat softer, with production big and demand rather slack. Handlers look for a better tone after the holidays, when production at mills is expected to ease off and millfeed buyers normally look more to forward needs. Quotations: bran $37.50@38.50, standard midds. $38@39, flour midds. $41@41.50.
Kansas City: Demand slow and mostly for immediate shipment; offerings fair as mills continue to run ahead of last year; local market now on shipping basis to East, which gives strong undertone; colder weather also strengthening factor; bran $36.25 @37, shorts $36.75@37.50, sacked; middlings $34@34.50, bulk.
Omaha: Demand satisfactory; supply ample; bran $37, shorts $37.50, standard midds., bulk $35.50.
Wichita: Demand fair for bran, slow for shorts; supply inadequate; basis Kansas City, Dec. 13: bran $36@36.50, shorts $36.50

FEED INGREDIENTS
Fish Meal • Scrap • Solubles
Bigelow Sales Company
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Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Galveston, Enid, Minneapolis, Norfolk, Nashville, Louisville, Memphis, Houston

@37; bran was unchanged to 50¢ ton higher, while shorts declined $1 ton, compared with the preceding week.

Ft. Worth: Demand fair for bran, slow for shorts; supply of bran moderate, shorts adequate; carlots, burlaps, prompt, wheat bran $43.50@44.50, gray shorts $44.50@45.50, delivered Texas common points; 50¢ lower on bran and $1 lower on shorts compared with previous week.

Chicago: Millfeeds moved at a faster pace during the week ending Dec. 14, and prices were firmer to higher. The market has declined for several weeks and it reached a level which made it competitive with the eastern market. Demand picked up from that direction, relieving the pressure of supplies. Too, flour mill running time is on a limited basis in some spots. Quotations Dec. 14: bran $43@43.50, standard midds. $43@43.50, flour midds. $46@47, red dog $46@47.

St. Louis: Demand slow; supply ample; trend steady; bran $40.75@41.25, shorts $40.75@41.25, St. Louis switching limits.

Milwaukee: Demand and supply fair; pure bran $43.50, standard midds. $43.50.

Cincinnati: Demand fair; trend of bran steady to strong, middlings easy; supply adequate; bran $46.50@47, middlings $49@49.50.

Louisville: Demand fair; trend weak; supply good; bran $46.20, mixed feed $46.95, shorts $46.70, standard midds. $49.90.

Buffalo: Sales were quiet in a pre-holiday lull. Mixers are working off inventories and withholding new commitments until after the first of the year. Bran ended unchanged; middlings were off $1@1.50 and heavy feeds were unchanged. Quotations Dec. 14: bran $46@46.75, standard midds. $46.50@47, flour midds. $48.50@49, red dog $49.

New York: Demand good; trend higher; supply sufficient; bran $53@53.75, standard midds. $54@54.75.

Boston: Demand spotty; supply adequate; bran $54@54.50, middlings $54.50.

New Orleans: Demand fair; trend steady to easier; supply adequate; bran $46@46, shorts $49@49.50.

Memphis: Demand poor; trend lower; supply ample; wheat bran $44, standard midds. $45, gray shorts $45.50.

Seattle: Demand slow; trend easy; supply good; $43 ton, delivered common transit points, carlots.

Portland: Demand slow; trend lower; supply ample; $42.

Ogden: Supply average; to Utah and Idaho: red bran and mill run $42, middlings $47; to Denver: red bran and mill run $49, middlings $54; to California: red bran and mill run $49.50, middlings $54.50, f.o.b. San Francisco and Los Angeles.

Los Angeles: Demand moderate; trend steady; supply ample; mill run, Utah-Idaho billing, sacked $48.50@49.50; red bran, delivered CCP, sacked $53.50@54.

San Francisco: Demand fair; supply ample; $48; red bran $53.50.

Philadelphia: Demand spotty; supply ample; bran $53, standard midds. $54.50, red dog $56.50.

MILLET

St. Louis: Demand fair; trend firm; supply ample; recleaned Early Fortune $2.50 cwt., sacked; recleaned White Proso $2.75 cwt., sacked.

MINERAL FEED

Ogden: Demand good; supply normal; $105 ton, 50-lb. blocks; $95 ton, granular, 50-lb. bags.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Ft. Worth: Demand fair; supply ample; all-purpose granules $80, block $90; mineral phosphorus 6% granules $93, block $103; cattle-sheep mineral, 7% phosphorus granules $90, block $99; hog mineral phosphorus 3½% granules $81, phosphorus 2% $55 (all in 50-lb. paper bags).

Sioux City: 50-lb. mineral blocks, 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $3 each.

Omaha: Demand good; supply tight; $85 sacked, $95 blocks.

Seattle: Demand steady; supply ample; trend unchanged; $65 ton for high phosphorus mixtures; $44 ton for competitive brands.

Wichita: Demand good; supply about offsets demand; all-purpose with iodine, 50-lb. blocks $92.50, 100-lb. bags $87.50, f.o.b. plant.

Portland: Demand slow; supply ample; trend unchanged; $42.

MOLASSES

Portland: Demand slow; supply ample; trend unchanged; $24.

Louisville: Demand fair; trend stronger; supply ample; 10½¢ gal., tank car lots, f.o.b. New Orleans.

Cincinnati: Demand fair; trend steady; supply adequate; 10¾@10½¢ gal., New Orleans.

Milwaukee: Demand fair; supply ample; blackstrap 10½¢, New Orleans.

Atlanta: Citrus molasses—demand good; supply limited; trend strong; $19 ton, bulk, f.o.b. Florida producing points, immediate.

San Francisco: Demand and supply good; $24 ton, f.o.b. cars Richmond, Cal.

Minneapolis: Market stronger; demand fair; 10½¢ gal., f.o.b. New Orleans, with January shipment ½¢ gal. higher; $24 ton, West Coast.

Buffalo: Demand good; trend and supply steady; 14¢ gal., f.o.b. Albany.

Kansas City: Demand fair; trend firmer; supply adequate; market influenced by reports of higher prices being sought for new crop Cuban supplies and higher transportation costs; December shipment unchanged at 10¾¢ gal., tank cars, New Orleans; with January-March offerings at 11½¢, reflecting the Cuban situation. Some bookings made for forward shipment on the latter basis.

Memphis: Demand poor; trend higher; supply ample; blackstrap 10½¢ gal., tank car, f.o.b. New Orleans.

New Orleans: Demand fair; trend steady; supply adequate; 10¼¢ gal. in tank cars, f.o.b. New Orleans.

Los Angeles: Demand good; trend steady; supply ample; $24, f.o.b. tank cars, Los Angeles harbor.

New York: Trend steady; blackstrap 12⅛¢ gal., tank cars, tank wagons, f.o.b.

Beaumont: Trend steady; blackstrap 11¢ gal. in tank cars and tank wagons, f.o.b. Beaumont.

Ft. Worth: Demand good; supply ample; blackstrap 13¢ gal., f.o.b. Houston; carlots, delivered Ft. Worth, cars and/or truck $29.23, seller's market price on date of shipment; maximum 14¢, December-February shipment.

Seattle: Demand steady; supply good; trend unchanged; $24 ton, f.o.b. Seattle, tank car lots.

Boston: Demand good; supply ample; 14¢ gal. in tank cars.

NIACIN

New York: Trend firm; $3 kilo, 50-kilo lots; $3.10 kilo, 10-kilo lots; $3.20 kilo, 5-kilo lots; $3.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $21; pulverized white oats $37; rolled oats $35.

Memphis: Demand poor; trend steady; supply adequate; 3½% protein, reground oat feed $20.80.

New Orleans: Demand fair; trend steady; supply ample; pulverized white oats $50.50@57, pulverized oats $48@50.50, mixed feed oats $43@46.50.

Portland: Demand slow; supply ample; trend unchanged; rolled $62, ground $59, cleaned $63.

Milwaukee: Demand and supply fair; pulverized, white $42, feed $40; molasses oat feed $35; reground oats, 3% $16, 5% $18.

Minneapolis: Demand remains slow to fair, with prices about unchanged. Quotations: feeding rolled oats $32, standard pulverized $41.50@42.50, feeding oatmeal $69, crimped oats $58, reground oat feed $15@16.

St. Louis: Demand fair; trend higher; supply ample; reground oat feed $17.50 in 100-lb. burlap sacks; pulverized white oats $46 ton, choice $46.

Louisville: Demand good; trend fairly steady to stronger; supply ample; reground $20.35; rolled oats $32.90; feeding oatmeal $76.90; pulverized white oats $47.40; crimped white oats $66.40.

Los Angeles: Demand moderate; trend steady; supply ample; white pulverized $64.

Philadelphia: Demand dull to fair; supplies fair to light; pulverized white oats $50.50; domestic oat feed $21, Canadian $28.

Seattle: Demand and trend steady; supply good; feed oats $62 ton, ground oats $61 ton, rolled oats $66 ton, all ex-warehouse, l.c.l.

Chicago: Demand improved; supply adequate; reground oat feed $15@15.50; fine ground feeding oatmeal $68@70; feeding rolled oats $59@62.

Boston: Demand steady; supply adequate; Canadian white pulverized $48; domestic ground mixed $41.50; reground oat feed $19.50@20.

OYSTER SHELL

Portland: Demand slow; supply ample; trend unchanged; western $29, eastern $34; granite and crystal grits, both $25.

Seattle: Demand steady; supply good; trend unchanged; eastern $32 ton, western $28 ton, both ex-warehouse, l.c.l.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Boston: Demand and supply steady; in paper $21.44.

New Orleans: Demand good; trend steady; supply ample; $16@18.25.

Louisville: Demand good; trend steady; supply normal; $20.39 ton.

Los Angeles: Demand steady; trend firm; supply ample; local $18.25, eastern $26.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 26% $51.50; 45% $70.50.

PEAT MOSS

Chicago: Demand good; supply ample; $3.65 standard 7½ cu. ft. bale.

Philadelphia: Demand dull; supply ample; $2.90, f.o.b. pier.

San Francisco: Demand fair; supply ample; $3.35 bale.

Boston: Demand steady; supply adequate; $2.90@3 bale, in carlots.

New Orleans: Demand fair; trend steady, supply adequate; 100-lb. bales German moss $3@3.35.

Los Angeles: Demand moderate; trend steady; supply ample; Canadian $3.40, 300-bale lots, delivered California main line points.

POTASSIUM IODIDE, U.S.P.

New York: Trend steady; U.S.P. granular and powder, free-flowing powder $1.90 lb. in 200-lb. lots, $1.92 lb. in 100-lb. lots, $1.95 lb. in 25-lb. lots; 90% KI in calcium stearate, calcium carbonate or magnesium carbonate mixtures, $1.81 lb. in 200- and 250-lb. lots, $1.83 lb. in 100-lb. lots, $1.86 lb. in 25-lb. lots, f.o.b. New Jersey; freight prepaid except on 25-lb. lots.

St. Louis: Demand fair; trend firm; supply ample; 100% pure potassium iodide, U.S.P., 250-lb. average in drums $1.90, 100-lb. lots in fiber drums $1.92; potassium iodide calcium stearate mixture, 225 lb. in leverpak drums $1.81, 100-lb. lots in fiber drums $1.85.

RIBOFLAVIN

New York: Trend firm; feed grade (in feed supplements): 5¢ gram in 3.63 to 18 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

San Francisco: Demand good; supply fair; bran $55, polish $62.

Ft. Worth: Demand fair; supply very scarce; carlots, rice bran $41@42 prompt shipment, f.o.b. south Texas rice mills; hulls $3@4, f.o.b. mills.

Atlanta: Demand good; trend strong; supply limited; bran $48, sacked, immediate, nominal.

Memphis: Demand poor; trend higher; none available; bran $40, sacked, f.o.b. Arkansas points.

New Orleans: Demand fair; trend easier; supply adequate; bran $43.50@46, Louisiana origin.

Los Angeles: Demand fair; trend steady; supply ample; bran $53.61, California production by rail.

SCREENINGS

Buffalo: Demand fair; trend steady; supply good; ground, sacked $33.25, New York, L. & E.; unground, bulk $24, New York.

Milwaukee: Demand and supply fair; 41% $66@66.50, 44% $64@64.50.

Atlanta: Demand fair; trend steady; supply ample; 44% $66.50, sacked, immediate.

Minneapolis: Somewhat better mixer demand was reported this week, and prices were more stable at $44.50@46, bulk, Decatur.

Omaha: Demand fair; supply adequate; 44% solvent $62; 41% expeller $66, pellets $68.50.

Chicago: Demand improved; supply plentiful; ground grain screenings $30.25; Canadian, bulk $22.25.

New Orleans: Demand fair; trend steady; supply limited; 3/64 in. grind $39@41.50.

Cincinnati: Demand fair; trend steady; supply adequate; Canadian $28; barley $20@24, both bulk, delivered.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Chicago: $22@22.75.
Kansas City: $23.15@23.50.
St. Louis: $21.40@22.
Des Moines: $22.50.
Philadelphia: $21.55@23.15.
Minneapolis: $23.15@23.85.

COTTONSEED OIL MEAL FUTURES

Closing prices of cottonseed oil meal (41% protein) on the Memphis Merchants Exchange in dollars per ton (bulk):

	Dec. 9	Dec. 12	Dec. 13	Dec. 14	Dec. 15
January	47.50@ 47.90	47.75@ 47.95	....@ 48.00	....@ 48.45	48.50@ 48.75
March	46.80@ 46.90	....@	46.75@ 47.50	46.75@ 47.00	....@ 47.00
December	....@*49.75	....@ 50.50	....@*51.75	....@*51.50	....@*51.50
May	46.75@ 47.25	46.75@ 47.25	46.75@ 47.00	46.75@ 47.00	....@ 47.00
July	47.00@ 47.25	47.00@ 47.50	47.00@ 47.50	47.05@ 47.25	47.30@ 47.75
October	47.25@ 48.50	47.25@ 48.25	47.25@ 48.25	47.25@ 48.50	47.25@ 48.50

*Bid.

SOYBEAN OIL MEAL FUTURES

Closing prices of soybean oil meal (basis Decatur, Ill.) on the Chicago Board of Trade and on the Memphis Merchants Exchange, in dollars per ton (bulk basis):

CHICAGO

	Dec. 9	Dec. 12	Dec. 13	Dec. 14	Dec. 15
December	....@ 49.05	49.10@ 49.25	....@ 49.50	50.25@ 50.50	50.35@ 50.50
January	....@ 49.05	....@ 49.75	49.85@ 49.90	....@ 50.10	50.25@ 50.35
March	....@ 50.80	....@ 50.85	....@ 50.80	50.90@ 51.10	50.95@ 51.00
May	51.85@ 51.95	51.95@ 52.00	51.90@ 51.95	....@ 52.10	52.05@ 52.10
July	51.85@ 51.95	51.90@ 52.00	51.80@ 51.90	51.95@ 52.00	52.00@ 52.10
August	....@ 51.85	51.85@ 51.95	51.75@ 51.85	51.90@ 52.10	51.95@ 52.10
September	49.00@ 49.40	49.00@ 49.40	49.00@ 49.40	49.30@ 49.65	49.25@ 49.60

MEMPHIS (unrestricted)

	Dec. 9	Dec. 12	Dec. 13	Dec. 14	Dec. 15
December	....@ 48.50	48.50@ 49.00	49.00@ 49.40	49.75@ 50.00	49.50@ 49.75
January	49.50@ 49.75	49.50@ 49.75	49.60@ 49.85	50.00@ 50.30	49.75@ 49.95
March	50.45@ 50.65	50.55@ 50.80	50.65@ 50.85	50.80@ 51.00	50.80@ 51.00
May	....@ 51.80	....@ 51.90	51.55@ 51.80	51.80@ 52.00	52.00@ 52.10
October	48.25@ 48.75	48.25@ 48.75	48.25@ 48.75	48.65@ 49.25	48.75@ 49.25
July	51.75@ 51.90	51.85@ 51.90	51.80@ 52.00	....@ 52.00	52.00@ 52.05
August	51.70@ 51.85	51.70@ 51.85	51.75@ 51.95	51.85@ 52.00	51.85@ 52.05
September	49.00@ 49.50	49.00@ 49.50	....@ 49.50	49.50@ 50.25	49.60@ 50.00

MILLFEED FUTURES

The following is a comparison of settling prices at Kansas City for Dec. 8 and 15:

Bran—	Dec. 8	Dec. 15
December	$36.65@ 36.80	$36.35@ 36.80
January	....@ 37.60	36.75@ 37.25
February	38.60@ 39.00	37.95@ 38.40
March	39.50@ 40.20	38.75@ 39.70
April	40.75@ 41.50	40.25@ 40.75
May	37.75@ 38.50	37.40@ 38.50
Shorts—		
December	$38.55@ 39.05	$37.00@ 37.75
January	39.50@ 40.30	37.95@ 38.50
February	....@ 40.75	39.50@ 40.50
March	42.50@ 43.50	41.50@ 43.25
April	43.75@ 44.75	43.00@ 44.40
May	43.75@ 45.25	43.25@ 45.25

Buffalo: $22.50@23.10.
Atlanta: $15@18.70.
Memphis: $19.40@19.95.

SORGHUMS

Cincinnati: Demand fair; trend steady; supply adequate; $2.65@2.70.

Los Angeles: Demand moderate; trend steady; supply ample; No. 2 milo, delivered CCP, prompt $2.60.

Ft. Worth: Demand good; offerings light; carlots, bulk, No. 2 yellow $2.17@2.22, delivered Texas common points.

SOYBEAN OIL MEAL

Boston: Demand slow; supply plentiful; $49, bulk, Decatur.

Seattle: Demand slow; trend easy; supply good; $77.50 ton, delivered sacked, carlots.

Ft. Worth: Demand slow; supply sufficient; carlots, 44% $70@71, depending on origin; truck lots $64@66, prompt, delivered Ft. Worth.

Decatur: Demand fair; supply adequate; 44% bulk, unrestricted $49.50@50.

Philadelphia: Demand spotty; supply ample; $48.50, bulk, Decatur.

San Francisco: Demand fair; supply ample; $77.57.

Portland: Demand slow; supply ample; trend lower; $44.50.

Ogden: Supply normal; $105@110.

Wichita: Demand slow; supply sufficient; 44% $65, f.o.b. Wichita.

Memphis: Demand slow; trend steady; supply ample; prime 44% solvent $55, sacked, f.o.b. Memphis.

Los Angeles: Demand slow; trend steady; supply ample; $77.57@78.57, delivered CCP.

New Orleans: Demand slow; trend lower; supply ample; 40% $70@72.50.

Kansas City: Demand limited to occasional cars for fill-in needs; most mills bookings lasting longer than anticipated; offerings moderate and prices steady; at $48.50@49, bulk, Decatur for Kansas City and western shipment. Forward quotations bringing no buying response, with January offered at $49.50 and January-March at $50.

Chicago: The soybean oil meal market

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appeared to be in fairly good condition during the week ending Dec. 14. Trading activity accelerated and supplies were not burdensome. The market in this area appeared to have evened off with that in other areas, making for a broader trading base. The greater demand pulled the price level up somewhat. Quotations Dec. 14: 44% protein soybean oil meal, unrestricted shipment $59.50@60.

Louisville: Demand fair; trend weak; supply normal; $60.50 ton.

Cincinnati: Demand fair; trend steady; supply adequate; $48.50@49, bulk, Decatur.

SUNFLOWER SEED

St. Louis: Demand fair; trend firm; supply ample; large black $17.50 cwt., large gray $17 cwt., medium black $15 cwt., medium gray $14.50 cwt., small black and gray $10 cwt.

TANKAGE

Chicago: Demand slow; supply heavy; 60% protein $67.50@75.

Wichita: Demand good; supply inadequate; 60% $72.50, f.o.b. plant.

Ft. Worth: Demand slow; supply moderate; 60% digester $77.50@80, f.o.b. Ft. Worth.

Milwaukee: Demand fair; supply good; 60% $70, bagged.

St. Louis: Demand fair; trend higher; supply ample; 60% $75@85 ton bulk, $82@89 ton in paper sacks, $83@90 ton in burlap sacks.

St. Paul: Market steady, with production heavy and demand good at the lower levels prevailing. Quotations: 60% digester $62.

Omaha: Demand slow; supply ample; $72.50.

Kansas City: Demand light; trend about steady; supply well sold for current month; 60% digester $70@73, sacked, Kansas City.

Cincinnati: Demand fair; trend stronger; supply ample; 60% digester $67.

Los Angeles: Demand fair; trend steady; supply ample; $1.40 a unit of protein.

New Orleans: Demand poor; trend steady; supply ample; 60% $77.50@82.50.

Louisville: Demand dull; trend weak; supply ample; $70@75 ton.

UP OR DOWN?

By Leonard W. Schruben
Agricultural Economist, Kansas State College

POPULATION GROWTH AND FEED UTILIZATION

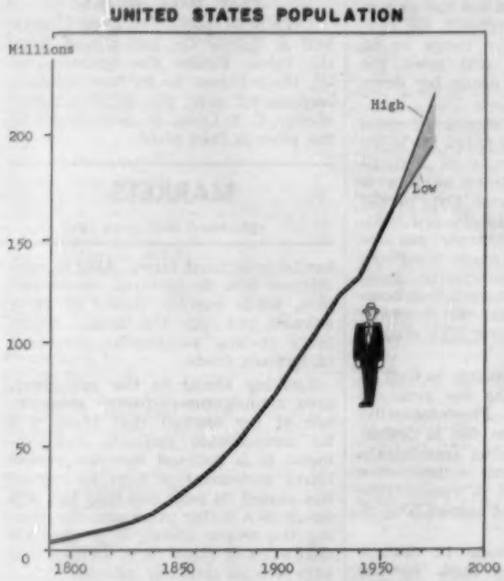
How long before an increasing U.S. population will catch up with our food supply? Will we be faced with a chronic food shortage in 25 or 50 years? How is this likely to influence the demand for manufactured feeds?

Many look to an increased population to solve our farm surplus problems over the long pull. The solution to this problem will have an important bearing on the future of the formula feed industry. There are two important trends to consider in evaluating this situation. We need to consider not only actual number of people in the U.S. but also the kind of food they eat and the changes being made in their diet.

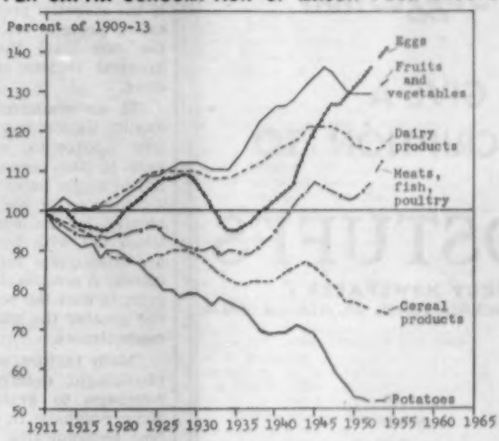
Exhibit 1 tells the story of our expanding population which makes up our main market for farm products. More than 200 million persons will live in the U.S. by 1975 if present trends continue. The chart, based on U.S. Census reports, indicates a middle guess from 210 to 215 million people. If this is realized, there will be twice as many persons in the U.S. by 1975 as in 1920.

Based on extension of past trends, we could expect more cereals to be fed to livestock in 1975 than now. More wheat probably will be fed to livestock. The same number of persons will want to consume more livestock products if we produce them in sufficient quantities. However, population growth alone isn't likely to solve our surplus problem at least in the immediate future.

UNITED STATES POPULATION



PER CAPITA CONSUMPTION OF MAJOR FOOD GROUPS



EXHIBITS 1 AND 2—Exhibit 1 (left) shows population, U.S., 1790-1954, with projection to 1975. Exhibit 2 (above) shows indexes of per capita consumption of major food groups, U.S., five-year moving average centered, 1911-1952, and calendar year 1954. (1909-13 = 100.)

Food Habits Change

Many people are surprised the first time they study Exhibit 2. It is a chart picturing trends in our eating habits the past 45 years based on studies of the U.S. Department of Agriculture. Workers in the Department of Agriculture say the most significant change in the pattern of food consumption in this country since the beginning of the century has been the gradual shift from cereal products and potatoes to such foods as dairy products, eggs, and processed fruits and vegetables.

You will note in studying the chart the per capita consumption of products creating the market for manufactured feeds has been increasing. There are some good reasons for these shifts, of course.

One is that family incomes have increased the past 50 years. Even many commonly regarded today as "poor folk" have better things to eat and use than moderately well-to-do families half a century ago. A part of this increased income has been used to buy a diet containing more fruits, vegetables, eggs, and dairy products, replacing some cereal products and potatoes each person eats.

Less heavy labor and more people living in cities also contribute to this trend away from cereals and potatoes. Improved marketing and transport facilities have had an influence. Refrigeration, for example, makes it possible for people to enjoy fresh fruits and vegetables that may have been grown clear across the country.

Other reasons for this shift could be listed, but there isn't too much use in doing so here. The fact that shifts have occurred is what is important.

Outlook Promising

These trends would indicate a continued growth of the manufactured feed industry as demand for more efficient as well as greater production of livestock products is realized.

This might be interpreted as an optimistic report relative to the prospective demand for formula feeds. And it is that. However, how that market is divided among the competitors supplying formula feeds is another matter. The over-all growth in demand for a product does not in itself insure inefficient manufacturers a profit.

In all probability, competition for this expanding market for formula feed will be intensified rather than diminished. However, this is an entirely different matter which should be kept in mind when considering the results of an expanded population having a higher per capita income on the demand for manufactured feed.

Protein Meal Futures Sag in Memphis Trade

MEMPHIS — Prices of protein oil meal futures were mostly lower on the Memphis Board of Trade last week. Volume sagged and the open interest registered a slight decrease.

The lower price level saw the nearby December option under the greatest pressure, first deliveries being made during the week when notices of 500 tons were made. They were stopped.

Factors in the price decline were a slackening of demand for cash protein oil meal, with offerings ample. The week saw interest displayed in the spreading of May to July. December lost as much as 75¢ ton. Losses in the more distant options went from 15@55¢ ton.

Final unrestricted soybean oil meal prices were unchanged to 75¢ ton lower. There were 30,500 tons of unrestricted oil meal sold, compared with 35,200 tons a week earlier.

Eastern trunk line soybean oil meal closings were 50¢ lower to 20¢ higher. Sales amounted to 3,700 tons, compared with 5,400 tons the week before.

Cottonseed oil meal went counter to the other oil meals in nearby positions. Final prices ranged from 50¢ lower to $2 ton higher, with the best advance being established in the nearby December option.

Volume of trade declined somewhat, 7,000 tons being sold last week as compared with 9,500 tons the week before.

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Bowman Feed Products, Inc.
130 Central Ave., HOLLAND, MICH.

NORTH CAROLINA CONFERENCE

(Continued from page 6)

of the importance of unidentified growth factors in poultry rations. He told of the problems in reproducing assays in the study of these factors. There frequently are multiple deficiencies, he said, sanitation problems arise, the adequacy of diet must be considered, and certain factors often carry over into the next generations which lead to distortions.

Several factors, he said, are the fish factor, whey, forage juice, alfalfa meal, dried brewers yeast, certain fermentation factors, grain distillers dried solubles and ash residues. More of them are needed in areas of bactericidal presence or conditions of stress. Antibiotics, he said, will tend to reduce the amount of UGF needed, but not replace them.

During the recess on the final day, a 400-ft. color motion picture, taken by Sam Golden, Amburgo Co., Inc., Philadelphia, was shown by Mr. Golden. The movie showed the events of the convention of the North Carolina Feed Manufacturers Assn., when the group chartered the S.S. Stockholm and took a five-day cruise to Bermuda.

It also was announced that the next summer outing of the NCFMA will be held at the Hotel Fort Sumter, Charleston, S.C. The dates will be announced later, but are expected to be near the end of July, 1956.

The morning session of the final day was moderated by Brantley DeLoatche, Farmers Exchange, Durham, N.C., past president of the NCFMA. The first speaker was Dr. G. H. Wise, NCS. He talked of supplementing roughages for dairy cows.

In the preparation of commercial concentrate mixtures for dairy cows, he said, the feed manufacturer assumes:

1. That the productive ability of the cows is such that they can utilize concentrate feeds profitably.

2. That the dairyman follows accepted modern husbandry practices.

3. That when circumstances necessitate marked digressions from recommended procedures in roughage feeding, that the dairymen will effect compensatory changes in kinds as well as in amounts of concentrates in the diet.

Insurance of maximum returns in the use of supplemental concentrates necessitates using this component of the dairy-cow diet within the framework of the listed assumptions. Thus, if a dairyman does not have an acceptable program, one should accompany the sale of the concentrate feed, Dr. Wise said. (Sound information is one of the most important "ingredients" in an effective roughage supplement.)

Some of the current problems considered in roughage supplementation are levels of proteins and the variety of ingredients in concentrate mixtures, and the ratio of concentrates to roughages in the diet. Dr. Wise continued:

"In conventional ratios of roughages and concentrates, the general recommendation is that the level of protein in the concentrate mixture vary inversely as the level of protein in the roughage fed. Since the total intake of protein, and not the source, is the essential requirement, the 16% crude protein mixture seems to be the one level that will meet the greatest variety of needs for dairy cows.

"If an abundant supply of good quality legume hay is fed to the dairy cow, apparently variety of ingredients in the concentrate mixture is not of major importance. Data on the significance of the variety and complexity in the concentrate mixture when fed with low grade roughage are inadequate for conclusive statements. A reasonable assumption, however, is that the poorer the roughage the greater the need for high quality concentrates.

"Many factors, economic as well as physiologic, determine the ratio of roughage to grain. Physiologically, some roughage in the diet is desirable; economically, some concentrate is advantageous. From a productive standpoint, the level of concentrate apparently should not exceed 50% of the diet."

The current increase in custom preparation of dairy feeds on the farm, said Dr. Wise, presents a challenging opportunity to the well-trained dealer. Within the limits of present knowledge he can "design" the concentrate to fit the roughage available.

Balancing Nutrients

Dr. W. M. Beeson, Purdue University, Lafayette, Ind., speaking on the nutrients required to balance roughages and hormone feeding, said there are some occasions when soybean meal, cottonseed meal or linseed meal may serve adequately as the sole supplement in balancing the diet of beef cattle when they are being fed on rations of high quality. However, he said, there are an equal number or more instances when cattle rations are deficient in certain essential nutrients.

Thus, he said, to protect against clinical and sub-clinical deficiencies and to make maximum use of feeds on the farm, it is necessary to compound a supplement that will serve equally well under a wide variety of conditions. Eventually, he believes, beef cattle rations will be as complex as swine and poultry rations are now.

Dr. Beeson listed several of the essential nutrients required to feed the billions of bacteria in the rumen which break down the cellulose into a usable form and also synthesize many nutrients essential for the life and well-being of beef cattle. They are:

1. Nitrogen compounds — protein, urea, ammonium salts, etc.

2. Energy—part from a readily available source of carbohydrate such as molasses.

3. Unidentified factors — and alfalfa meal is a good source.

4. Minerals—essential elements in proper amounts and balance.

5. Vitamin A.

6. Other substances — antibiotics and hormones when needed.

Final speaker on the program was Dr. Ray Parkhurst, director of nutrition and research for Lindsey-Robinson & Co., Roanoke, Va. He gave a round-up report on applying research results to manufactured poultry feeds. While the successful feed man uses all the results of research he can to make his feeds better, he said, there is so much new information released in the course of a year that it is almost impossible for most feed men to digest more than a small fraction of it. However, it is the responsibility of the feed man to improve his product.

Working on the theme "the final test of a ration will not be what ingredients it contains but what profit it gives to the producer," Dr. Parkhurst concluded that the returns a producer gets from feeds that give superior results almost always justify the relatively small price difference over an "average" feed.

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NEW MILL BUILT

JACKSON, MO.—The Cape County Mill & Supply Co. has moved from the Jalma Realty Co. quarters on W. Main Street to its new building constructed near the railway right-of-way. C. L. Coon, Jr., is manager of the modern feed plant.

MARKETS

(Continued from page 2)

available on most farms. Also, farmer interest now is centered on Christmas, while current prices of farm animals and eggs are further deterrents to any substantial purchases of formula feeds.

Looking ahead to the new year, area manufacturers pretty generally are of the opinion that there will be considerable business improvement. It is believed that the recent heavy movement of hogs to market has passed its peak and that this will result in a better price situation during the weeks ahead. It is also felt that sales of other farm animals and eggs will be similarly affected.

Another factor that could help sales early in the new year is the trend toward stiffening of formula feed prices, noted during the last two weeks after two months of declining prices. Last week's price increase was continued this week with an average upswing of $1 ton, and this trend, if continued, could well serve as an inducement to farmers to stock up as a hedge against higher prices later on. The sales improvement this week was reflected in an average 15% increase in area mill production.

Southeast

The feed situation in the Southeast this week continues slow and dull. The usual December lull seems to have started even earlier this year, and very few expect things to get better before the new calendar year.

The local corn situation seems to be tightening slightly, with movement from the farms slowed even at moderately increased offering prices by shellers. Most buyers feel that the market will have to advance after the end of the month. Most shellers and corn millers are sold up for the balance of this month, and additional offers for new business are hard to uncover. On the other hand, feeders seem to be in good shape with their inventories and are not pressing for additional supplies.

The north Georgia broiler markets are still on the weak side, and prospects are for this trend to hold for some time to come. Many dairy and

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cattle feeding operations are being reduced, and this naturally cuts down on feed demand. Uncertainty of future prices is blamed primarily for this reduction. Hog business is still very poor, with feeding at a minimum when at all possible.

Feed manufacturers' purchasing agents are covering only immediate needs and doing everything possible to work off inventories for year-end tax reasons.

Feed prices are reported to be holding about steady in most cases. Some locally-produced feed materials, such as cottonseed hulls and citrus pulp, have been reduced in price in order to spur demand. It is still expected that peanut meal will be available before too long from the Southeast, but as yet, there have been no offerings.

Most of the trade seems to believe that with depleted inventories, demand will probably pick up during January.

Pacific Northwest

The formula feed trade continued quiet during the week, with feed men more intent on running down their inventories for end of the year tax considerations than in buying ingredients. Sales of formula feeds were reported to be slow for the same reason.

The dairy feed business is fairly good, but considerable quantities of high fiber and low protein mixes are moving into this trade as dairymen endeavor to keep their costs down. Demand for cattle feeds is reported to be fairly good, but price is a primary consideration and quality is secondary. The turkey feed business has come to almost a complete standstill, and broiler business is at a seasonal low, although this class of feed is expected to turn upward after the first of the year.

There is a squeeze on hay, with eastern Washington sellers holding for higher prices and buyers on the coast paying up to $44 ton for good quality hay. In spite of this, alfalfa meal prices have not moved upward, and demand for alfalfa meal is rather slack.

Millfeed is draggy, with a good current grind and good prospects for at least 30 days. There have been few forward bookings, but spot millfeed is under pressure, and buyers do not feel disposed to make commitments ahead.

Formula feed prices continued to work down, with most manufacturers dropping their lists another dollar a ton during the week, based on the easiness in millfeed and a generally lethargic protein situation. Canadian herring meal moved up to $2.30 a unit of protein at Vancouver, but this was due to the end of current fishing operations. Fishing will resume after the first of the year, and some buyers feel that the present price may not hold when additional selling pressure is exerted on the market at that time.

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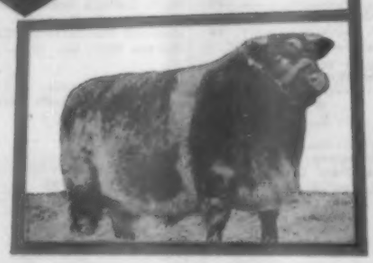

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